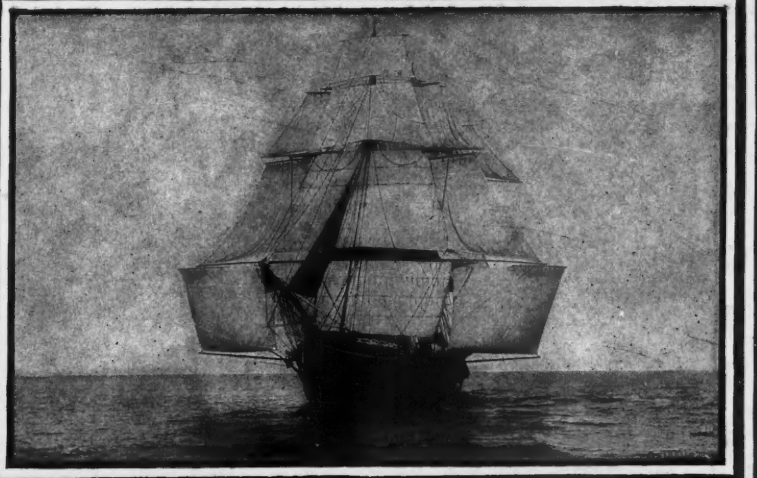
THE DENTAL DIGEST



AUGUST 1918

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GEORGE WOOD CLAPP, D.D.S.

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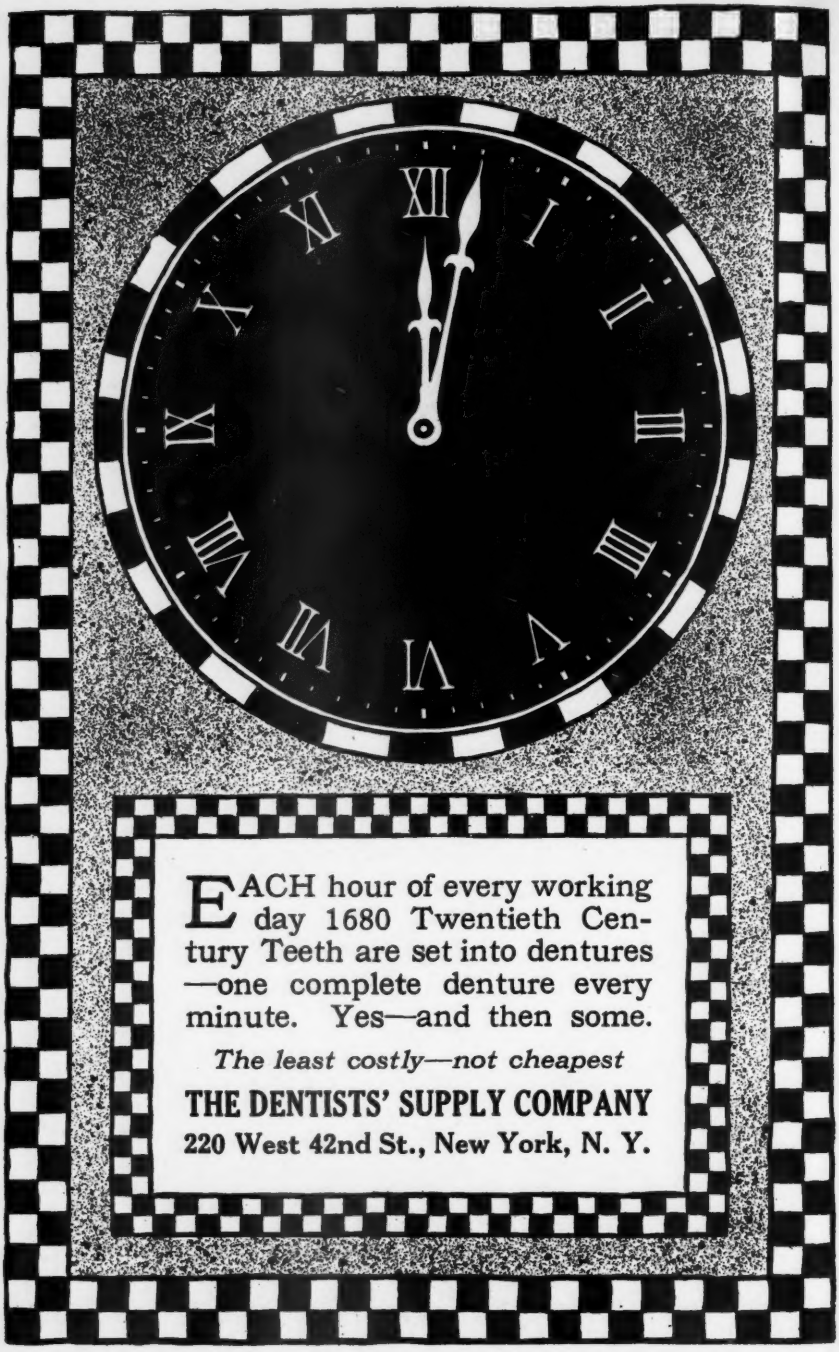

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220 West 42nd St., New York, N. Y.

THE
DENTAL DIGEST

Vol. XXIV AUGUST, 1918 No. 8

CONSERVATION OF PLATINUM IN DENTISTRY*

THE CONSTITUTION, PHYSICAL PROPERTIES AND PRACTICAL APPLICATION OF GOLD ALLOYS REPLACING PLATINUM AND IRIDIUM FOR DENTAL PURPOSES, WITH THE OBJECT OF CONSERVING PLATINUM METALS FOR THE BENEFIT OF THE GOVERNMENT

By LOUIS J. WEINSTEIN, New York, N. Y.

DIRECTOR, DEPARTMENT OF APPLIED PHYSICS, METALLURGY AND PROSTHETIC TECHNICS, COLUMBIA UNIVERSITY, SCHOOL OF DENTISTRY

(*Continued from July*)

GOLD ALLOYS FOR CLASPS AND DOWELS

The alloys known as clasp metal, or platinized gold, as ordinarily obtainable, have been used, with poor results, for casting sections of bridge work, etc., and are being used to a large extent and with but mediocre results as a substitute for iridio-platinum for crown posts, dowels, etc. The ordinary clasp metal is also used to a considerable extent for posts or dowels in the construction of cast base crowns, with usually poor results on account of its brittleness, especially after it has been cast again. There appear to be about four distinct types of clasp metal obtainable at the supply houses.

The following formulae are nearly exact, and types one and two readily indicate the particular rôle that copper plays as a hardening agent.

Type one represents a class of clasp metals of which there are several on the market. They contain a trace of platinum, so that they may legally be called platinized gold, and a very high percentage of copper. The copper content confers a high degree of hardness and elasticity upon the alloy, but during subsequent heating (soldering and annealing) and working, the alloy softens considerably and loses a good deal of the original elasticity and sometimes becomes very brittle, especially when

*Read before the Michigan State Dental Society, at its annual meeting in Detroit, on April 9, 1918.

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overheated.* As the melting point is quite low, soldering with even a comparatively low fusing solder is apt to endanger the integrity of the alloy more often than not.

COMPOSITION OF CLASP METALS

CONSTITUENT METALS	TYPE 1*	TYPE 2*	TYPE 3*	TYPE 4†‡	"ELASTIC" GOLD
Gold	63	65	63	65	66.5
Silver	14	15	17	6	1.5
Copper	21	13	7	7	6.5
Platinum	2	7	13	18	16.5
Palladium	..	..	..	4	9.0
	100	100	100	100	100
COMPARATIVE MELTING POINT	1600°F 870°C	1725°F 940°C	1860°F 1015°C	1960°F 1070°C	2100°F 1150°C

*From analysis.

†Is known commercially as "high-fusing" clasp metal.

Type two represents a class of clasp metals which contain a larger percentage of platinum and less copper. This alloy, while not quite as elastic before annealing retains its elasticity after annealing or soldering better than type one, and makes a quite satisfactory material for clasps for vulcanite work, etc., if not excessively heated and otherwise abused.

Neither of the two alloys is suitable for work requiring repeated soldering operations. Posts or dowels made of these alloys and cast against usually show a partial fusion, and although this fusion is not always evident, the posts if cast against break away (at the junction) ultimately. These alloys are absolutely unfit for the making of split pins.

Type three offers a much better material. It contains still less copper and more platinum, but has not sufficient strength and elasticity. For want of a better material it has been used for the construction of split pins for a number of years. In addition, the fusing point, although higher than that of types one and two, is too low, and when attempting to solder the solid portion of a split pin with coin gold, the metal is apt to fuse partly becoming granular and brittle, and the finished pin is apt to give out in use. The type three clasp metal has been cast against with fair results, but the danger of burning it is imminent.

In the three types of clasp metals under discussion, is demonstrated the value of copper and its superiority over platinum as a hardening

*Gold-silver-copper alloys containing more than 15 per cent. copper are quite brittle, ununiform, and variable in behavior upon annealing.

agent, and the value of platinum in raising the melting point lowered by the copper.

A number of experiments were made to improve the type three clasp metal and it can readily be seen from formula of type four how comparatively simple it was to do so, having established the properties of the binary alloys as a foundation. By raising the platinum to 18 points, the melting point and the elasticity were increased somewhat. Even at this stage the advance in melting point appeared insufficient, and, as it was deemed advisable to avoid more platinum on account of the danger of its not alloying uniformly, palladium, which alloys readily, was added and the melting point increased to a total of app. 100 degs. F. above type three. No more palladium was used on account of its decolorizing action. With the comparatively small content (4 per cent.), the color of the alloy is still quite goldlike.

This alloy has been used with uniformly good results. It may be soldered safely with coin gold and may be cast against safely if a comparatively heavy gauge of wire (above 16 G. B. & S.) is used.

In view of the fact that for split pins, dowels for cast base crowns, etc., color is no object, it was deemed advisable to raise the melting point even above that of type four and the elastic gold was formulated, using a considerable percentage of palladium. The palladium, of course, decolorized the alloy completely, but raised the melting point very considerably, and, in conjunction with the copper and the considerable percentage of platinum, produced an elasticity even beyond that of type four and a melting point very considerably higher.

This alloy can be soldered with perfect safety with pure gold or anything below that in melting point. It may be cast against with perfect safety (except very thin wire) and retains its strength and elasticity after any reasonable number of soldering operations that it may necessarily be subjected to. *It may be soldered very readily and with better union than iridio platinum. It is much more rigid than 15–20 per cent. iridio platinum and possesses elasticity that is practically absent in all of the iridio platinum alloys, and it may therefore replace the latter for a great many purposes.*

In the making of split posts of the elastic gold it is advisable to solder the area that is intended should remain solid with casting gold "C," as it offers a color contrast to the comparatively gray-white elastic gold.

The line of demarkation between the solid and the split portions of the post will be then readily distinguished. As the "C" gold is of sufficiently high melting point it will not reflow during later soldering operations.

The comparative hardness and the elasticity of the four types of

clasp metals and the "elastic" gold is approximately as illustrated in the following:

COMPARATIVE ELASTICITY AFTER ROLLING OR DRAWING

Type One	Type Two	Type Three	Type Four	"Elastic" Gold
10	9	8	9+	10

COMPARATIVE LOSS OF ELASTICITY AFTER SOLDERING AND ANNEALING

Type One	Type Two	Type Three	Type Four	"Elastic" Gold
4–5	3	2	1	1

Types one and two become very brittle if overheated during soldering. Type three is subject to the same to a lesser degree, and type four but rarely. The "Elastic" gold appears practically immune to temperatures below the melting point of pure gold.

Clasp metal should always be annealed before use, as manufacturers often neglect to do so after the rolling or drawing operations.*

GOLD ALLOYS FOR CAST CLASPS

It has been generally believed that metals and alloys in a cast form are not equivalent to metals in the forged, rolled or drawn form. While that is true in the great majority of instances, there are exceptions in various industrial alloys, and one in dental alloys, which latter has proven very fortunate indeed, as it has made possible the cast clasp.

During the past several years, a number of operators made efforts to cast clasps from metals of various formulae, including some of those originated by the author. These attempts have been practically without success, and the statement that clasps could not be cast with satisfactory results was accepted until about two years ago, when Dr. Norman B. Nesbett of Boston, Mass., who has done considerably more work along these lines than anyone else, finally succeeded in developing a satisfactory technic, and proceeded to cast clasps of the author's alloy "B." As might be expected, this formula, while eminently satisfactory within certain limitations, was not rigid enough to produce the required strength, hardness, resiliency and elasticity. It did not take long to discover the

*See further description of "Elastic" gold under alloys for orthodontic purposes.

inadequacy of this alloy, and experiments were then made to cast the author's elastic gold, which produces much better results so far as strength and elasticity are concerned, but the castings were rough and inaccurate requiring a good deal of trimming and finishing, and not producing results as satisfactory as expected. The author, when consulted in the matter, stated that the results obtained were exactly what might be anticipated from high fusing metal; high in platinum content, and that to obtain satisfactory results it would be necessary to lower the melting point of the alloy without decreasing its inherent strength and elasticity. He then suggested the addition to the elastic formula of zinc, which would serve to both decrease the melting point and increase the strength and hardness. The eminently satisfactory manner in which the author's suggestion has worked out in the hands of Dr. Nesbett, who has to date over three hundred of the clasps in use, and numerous others, has been a source of great gratification to the author, as it has served to prove the value of many of his contentions regarding the various metals and their alloying relations, in spite of the fact that many of his findings have been distinctly contrary to the statements published in all the works on dental metallurgy which have appeared up to date.

The zinc required to modify elastic gold was incorporated in a very simple manner, by adding some of the author's No. 68 solder to the elastic gold, producing the following:

FORMULA FOR CASTING GOLD "E"

Gold	67.0
Silver	4.5
Copper	8.5
Platinum	12.0
Palladium	7.0
Zinc	1.0
Total	100.0

Melting point, 1960 degrees F., 1070 degrees C.

The above is the formula resulting from a combination of three parts by weight of elastic gold, and one part by weight of No. 68 solder. It is intended for use with the nitrous oxide blowpipe, and flows readily when the proper temperature is attained, producing castings which possess a remarkable degree of strength, elasticity and resiliency.

Residue buttons may be remelted without deterioration, if a re-

ducing flux is used, and will retain their integrity, as proven by several analyses.

CASTING GOLD "F"

Gold	67.0
Silver	5.0
Copper	9.5
Platinum	11.0
Palladium	6.0
Zinc	1.5
Total	100.0

Melting point 1850 degrees F., 1010 degrees C.

The above is the formula resulting from a combination of two parts by weight of elastic gold, and one part by weight of No. 68 solder. It is intended for use with the ordinary gas and air blowpipe. The castings obtained are equal in every respect to those made from formula "E," and have been used with eminently satisfactory results.

Formula "E" may be transposed to formula "F" by the addition of 3 grains of No. 68 solder to each pennyweight of formula "E."

(*To be concluded in September number.*)

PLATINUM

The charge made before the Ways and Means Committee of the House that the Government has been lax in controling the platinum supply is serious. If there is one commodity above all others as to which Government manipulation is justified it is platinum. The amount to be had is very small; it is easily regulated and can be exactly followed. It is of very great importance in war work and none should be left in private hands until after all war needs are met. Representative LONGWORTH and Mr. WEINSTEIN deserve public thanks for pressing the matter. It is not a case for long winded investigation and debate but for instant action.—Editorial in *N. Y. Sun.*

AN INSTANCE OF THE RELATION OF ORAL INFECTION TO SYSTEMIC CONDITIONS

By Fred D. Miller, D.D.S., Altoona, Pa.

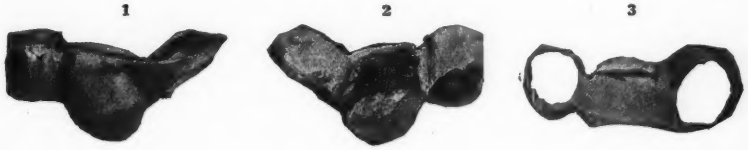
PAPER NO. FIVE

A CASE OF ACUTE INDIGESTION

Mr. M., 6 feet 2 inches tall, weighing 190 pounds, a mine superintendent by business, and accustomed to a vigorous outdoor life, had been suffering for six months from nearly continuous acute indigestion. He expressed his condition by the remark, "I can eat hardly anything, and I suffer all the time from what little I do eat." He was losing weight and strength.

He came to the office to have a loose bridge reset and a plate made for his edentulous upper jaw.

A mere glance at his mouth showed that the things he desired to have done were the least important among those which needed to be done. By its general condition and odor the mouth proclaimed that it lacked proper care. Extending from the lower left second bicuspid to the lower left second molar was a bridge which was the most horrible example of "gilded dentistry" that I have ever seen. Three views are shown.



The second molar and second bicuspid were surrounded by vertical bands without tops or occlusal surfaces. This had been in place for several months and must have been loose all that time. No care or skill whatever had been exercised in the preparation of the teeth to receive the bridge. The lower anterior teeth were in position, and presented very extensive calcific deposits, and the gums were in a condition of acute gingivitis.

I immediately explained to him that it was much more important to clean the teeth and remove the bridge than to do the work for which he had come. The bridge was easily lifted out of position, and the remainder of the sitting was devoted to the removing of the deposits.

When he returned a week later, he said, "Do you know, doctor, I thought it funny that a big fellow like I am should suffer from indigestion as I have for six months. Since you have cleaned my teeth I have not had a single moment's discomfort and I can brush my teeth without causing the gums to bleed." His condition has remained satisfactory.

The explanation is simple. With his mouth in that condition, the first stage of digestion could not take place. The stomach had stood all it could, and the absorption of the putrid material from a filthy mouth was the cause of the pain. This is not a case of focal infection, but rather a case of absorption of toxins, which would probably have gone on to a chronic gastritis and ultimately to gastric ulcer.

The dentist who placed a bridge in that patient's mouth without first cleaning it might easily have signed the patient's death warrant.

THE RED, WHITE AND BLUE OF IT

"Here's to the red of it;
There's not a thread of it,
No, nor a shred of it,
In all the spread of it,
From foot to head,
But heroes bled for it,
Faced steel and lead for it,
Precious blood shed for it,
Bathing in red.

"Here's to the white of it;
Thrilled by the sight of it,
Who knows the right of it
But has felt the might of it
Through day and night;
Womanhood's care for it
Made manhood dare for it.
Purity's prayer for it
Kept it so white.

"Here's to the blue of it,
Heavenly view of it,
Star-Spangled hue of it,
Honesty's due of it,
Constant and true;
Here's to the whole of it,
Stars, stripes, and pole of it,
Here's to the soul of it.
Red, white, and blue."

In Memoriam

Junius B. Wood, writing from the front to the New York *Globe*, and recounting deeds of heroism by American soldiers records the following:

"One of the most striking of these deeds of heroism was that of Dental Surgeon Weeden C. Osborne of St. Joseph, Mo., who, after being attached to a regiment only a few days, went into action. When Captain Donald F. Duncan of the same city was wounded in the advance on Bouresches, June 5th, Osborne, who was there aiding the wounded, saw him fall. Though shells were bursting on all sides, he ran to his fallen friend, picked him up in his arms, started back, and had almost reached a place of shelter with his unconscious burden when a shell, aimed with deadly accuracy, killed both."

THE LICENSURE OF PHYSICIANS, DENTISTS, PHARMACISTS, AND VETERINARIANS

By One of the Originators of the Plan

After meeting with a number of Physicians, Dentists, Pharmacists, and Veterinary surgeons in Kansas City, Missouri, who were gathered from Kansas, Missouri, and Oklahoma, we have figured out one way to help win the war, by getting more revenue into the Treasury Department of the United States. We will explain the object of our meeting in just as few words as possible.

We realize the inconvenience of having so many State Boards to regulate our practices, especially when we consider the obstacles and technicalities imposed by them. What we have been striving for so long is National Registration. We want to have a bill passed by Congress to allow us to register with the Government. In conjunction with our Harrison Narcotic Act, this act will do away with a lot of illicit narcotic traffic and will allow us practitioners to step from one state to another to practise our profession instead of going before a State Board in each state, with the probability of not getting a license, for reasons known only to the State Board which is often appointed for political reasons.

I mean by National Registration that we undergo an examination before a Federal Board, obtain a license, pay a fee to the Government of $25.00, and this should be followed by another small fee of $1.00 to $2.00 a year as a renewal of license. We will endeavor to show some figures which will help win the war, especially when we are willing to put into the coffers of Uncle Sam, something like Six Million Dollars which could be augmented with a continuance by a large sum annually. This proposition of National Registration is a *real* way to stop illegal men from practising on the people, thereby doing much harm and lowering the standard of these professions in the mind of the public. For instance, if a professional man lived in Missouri near the Kansas or Oklahoma border, and had a call to some poor unfortunate, because he was not in possession of the other state's certificate, would it be right for him to refuse to go on that account, while some other sufferer could come across the line to the same dentist's office and get all the treatment and medicine necessary? At the same time, all other business is carried on from one state to another without any formalities whatever. The Doctors are now realizing that they are away behind the times, and the war has brought them face to face with difficulties which must be removed. But they are now awake! An army surgeon can come into your state and operate and treat disease

in any capacity, but we cannot go to the other state. *Why?* Well, let us wake up and find out, but above all things, let us help win the war. (This bill would only apply to legitimate practitioners, and those coming from reputable schools in the future.)

A few of the most important reasons why the Government should regulate the practice of these professions are:

1. It will stop the practice of grafters.
2. It will stop the practice of peddling narcotics.
3. Help the schools and colleges in their efforts to raise the standard of education.
4. Help the practitioner continue his work, who is living along the borders of states and go to sufferers should it be necessary, in adjacent states near the boundary line.
5. Keep the registrant's permanent address on file with proper authorities, thereby protecting him from imposters trying to make use of his professional credentials.
6. Permit the practitioner to change his residence from one state to another, should he or she feel the physical or financial necessity for doing so.
7. Provide funds to *help win the war* and have an income for the future which will be necessary, in years to come, to pay the war debt. (Under the present condition such provision does not exist.)
8. The National Registration Plan is favorable to 95 per cent. of all professions concerned; if they but realize the vast benefits that may be derived from it.

If 40,000 Dentists register at the $25 fee, it would mean	$1,000,000
If 60,000 Physicians register at the $25 fee, it would mean	1,500,000
If 60,000 Druggists register at the $25 fee, it would mean	1,500,000
If 20,000 Veterinarians register at the $25 fee, it would mean	500,000
Total	$4,500,000

While these figures do not show the total number of the four professions, it is an approximation and would probably aggregate a much larger amount. The amount of the license fees could be raised, if necessary, and this would be discretionary with the Department.

DENTAL LAWS

1918 DENTAL LICENSE REQUIREMENTS IN THE UNITED STATES OF AMERICA

JUNE 30, 1918, REVISION

BY ALPHONSO IRWIN, D.D.S., CAMDEN, N. J.

UNIVERSAL REQUIREMENTS

(1) All applicants for a dental license must undergo an examination. (2) All examinations and writing must be conducted in the English language. (3) The applicant must have reached the age of twenty-one years or over, and possess a good moral character. (4) High School education. (5) A Dental Degree, countersigned by the Secretary, Registrar, Dean or Provost of his college, as rightfully belonging to the individual whose photograph is attached thereto. (6) Must present a properly filled out and attested application, accompanied by a recent unmounted cabinet-sized photograph of himself, countersigned by the applicant and attested by the photographer or the Dean or Secretary of the College as stated above. (7) Must present all credentials to the Secretary of the Board at least one week prior to the examinations, including all licenses, if any, already in the possession of the candidate, and pay the license fee (ranging from $10.00 to $50.00) by a certified check or post-office money order or cash. (8) Must present himself at the proper time and place to undergo a practical and theoretical examination before the Board of Examiners upon the subjects and tests usually taught in a *standard* dental college. Examinations are usually timed to occur shortly after dental college commencements, by the State Board of Dental Examiners.

Address of Secretaries of Boards of Dental Examiners in the United States of America and Possessions, also the Dominion of Canada, including month and place of examinations and fee.

Alabama: H. Clay Hassell, Tuscaloosa.—June, December—Birmingham or Tuscaloosa $25.00

Arizona: Eugene McQuire, 202–203 Noll Bldg., Phoenix.—June, October—Bisbee or Phoenix 25.00

Arkansas: I. M. Sternberg, Fort Smith.—November—Little Rock $15.00

California: C. A. Herrick, 133 Geary St., San Francisco.—May or June, December—San Francisco or Los Angeles . . . 25.00

Colorado: R. C. Quick, 310 Metropolitan Bldg., Denver.—June, December—Denver 25.00

Connecticut: Edward Eberle, 902 Main St., Hartford.—June, December—Hartford 25.00

Delaware: C. J. Kinkead, 825 Washington St., Wilmington.—October—Wilmington 20.00

Dist. Columbia: W. M. Simkins, 320 Woodward Bldg., Washington.—January, June—Washington 10.00

Florida: R. P. Taylor, St. James Bldg., Jacksonville.—January, June—Jacksonville 25.00

Georgia: D. D. Atkinson, Brunswick.—January, May or June—Brunswick, Atlanta 10.00

Idaho: A. M. Jacobsen, Pocatello.—January. June or July—Boise 25.00

Illinois: Ezra F. Hazell, Springfield.—June, November—Chicago 25.00

Indiana: H. C. McKittrick, 605 Hume-Mansur Bldg., Indianapolis.—June, November—Indianapolis. 20.00

Iowa: J. A. West, 417 Utica Bldg., Des Moines.—June, December—Des Moines, Iowa City 20.00

Kansas: G. L. Ambrose, El Dorado.—June, December—Topeka 20.00

Kentucky: J. H. Baldwin, 636 Atherton Bldg., Louisville.—June, December—Louisville 20.00

Louisiana: V. K. Irion, 727 Maison Blanche, New Orleans.—April or May, October—New Orleans 25.00

Maine: Will S. Payson, Castine.—June, September—Augusta . 20.00

Maryland: F. F. Drew, 701 Howard St., Baltimore.—May, November—Baltimore 10.00

Massachusetts: George H. Payne, 29 Commonwealth Ave., Boston.—June, December—Boston 20.00

Michigan: B. S. Sutherland, Owosso.—June, December—Ann Arbor 20.00

Minnesota: C. W. Benson, 322 New Jersey Bldg., Duluth. March or June, November or December, Minneapolis . . . 20.00

Mississippi: B. J. Marshall, 4-7 Turner-Cox Bldg., Marks.—June—Jackson 10.00

Missouri: V. R. McCue, Cameron.—June, October—Jefferson City 25.00

Montana: G. A. Chevigny, 107 Yeger Bank Bldg., Butte.—January, July—Helena $50.00

Nebraska: S. A. Allen, Loup City.—June, November—Lincoln, Omaha 20.00

Nevada: Wm. H. Cavell, Carson City.—June, December—Reno, Carson City 25.00

New Hampshire: Harry L. Watson, 913 Elm St., Manchester.—June, December—Manchester 25.00

New Jersey: J. C. Forsyth, 430 E. State St., Trenton.—June, December—Trenton 25.00

New Mexico: M. J. Moran, Deeming.—June—Sante Fe . . . 25.00

New York: Minor J. Terry, Education Bldg., Albany.—June, December—Albany, Buffalo, New York 25.00

North Carolina: F. L. Hunt, Asheville.—January, June—Wilmington, Durham 20.00

North Dakota: W. E. Hocking, Devil's Lake.—January, July—Fargo 25.00

Ohio: R. H. Vollmayer, 947 Nicholas Bldg., Toledo.—June, October—Columbus 25.00

Oklahoma: H. Overbey, Ryan.—June, December—Oklahoma City 25.00

Oregon: H. H. Oblinger, Salem.—June, November—Portland or Salem 25.00

Pennsylvania: A. H. Reynolds, 4630 Chester Ave., Philadelphia.—June, December—Philadelphia, Pittsburg 25.00

Rhode Island: E. A. Charbonnel, 139 Mathewson St., Providence.—June or July—Providence 25.00

South Carolina: R. L. Spencer, Bennettsville.—June, Selected date—Columbia 15.00

South Dakota: L. S. Spencer, Watertown.—January, July—Sioux Falls 25.00

Tennessee: W. G. Huchison, 346 Denton Bldg., Nashville.—June, Selected date—Nashville 15.00

Texas: H. B. Cave, 810 Wilson Bldg., Dallas.—June, December—San Antonio 25.00

Utah: J. F. Christianson, 1002 Walker Bank Bldg., Salt Lake City.—June, November—Salt Lake City 20.00

Vermont: H. F. Hamilton, Newport.—June, Selected date—Montpelier 25.00

Virginia: E. U. Potter, 303 Payne Bldg., Roanoke.—June, Selected date—Richmond 10.00

Washington: F. B. Lynott, 249 Peyton Bldg., Spokane.—May, November—Seattle, Spokane $25.00
West Virginia: H. H. Smallridge, Charleston.—June, Selected date—Wheeling 25.00
Wisconsin: F. A. Tate, Rice Lake.—June, Selected date—Milwaukee 25.00
Wyoming: Peter Appel, Cheyenne.—June, Selected date—Cheyenne 25.00
Alaska: E. H. Kaser, Juneau.—January, July—Juneau . . . 25.00
Hawaii: C. B. High, Honolulu.—January, July—Honolulu . . 20.00
Porto Rico: L. B. Noa, San Juan.—February, August—San Juan 25.00
Philippine Islands: M. de la Concepcion.—Address: T. Pinpin, No. 25, Manila, P. I.—June, December—Manila . . . 25.00

CANADA

REQUIREMENTS FOR LICENSE TO PRACTISE DENTISTRY

Dental students are informed that a University Degree in Dentistry does not always give a right to practise the profession of dentistry. It is necessary to conform with the Dental laws of the Country or State, or Island or Province in which it is proposed to begin practice. Every province in Canada at present has its special requirements for its license, and in most provinces a special standard of general education is insisted upon before beginning the study of Dentistry. Students who intend practising in Canada are advised to register their qualifications in the Province in which they intend to practise at the *beginning* of their course in Dentistry.

DOMINION DENTAL COUNCIL

The Dominion Dental Council of Canada is a central organization under the control of the dental profession of Canada. Its object is to erect and maintain a standard of education and ethics for the dental profession, and to conduct professional examinations and issue Certificates of Qualification which shall be accepted without further examination by the provinces. For information concerning the requirements of the Dominion Dental Council, apply to Dr. W. D. Cowan, Secretary of the Dominion Dental Council, Regina, Sask., or to the Dental Registrar of any Province.

Seven of the nine Canadian Provinces, i.e., all but Quebec and British Columbia, have entered into an agreement whereby the holder of a license granted by the Council may practise in any of the subscribing provinces on the following conditions:

(1) Holding a matriculation certificate of the proper standard.

(2) Passing the examinations set by the Council.

(3) Paying the local provincial registration fee.

For Matriculation, the Council accepts the Junior matriculation of the Province of Ontario or Matriculation into the Faculty of Arts of any Canadian University.

DOMINION OF CANADA AND ISLANDS

Dominion Dental Council of Canada, address for full information W. D. Cowan, Sect'y, Regina, Sask.

Alberta: James McPherson, 205 Moser Ryder Block, Edmonton, or Cecil E. Race, Registrar, Univ. Alberta, Edmonton.—Spring and Fall—Edmonton $50.00

British Columbia: Sect'y H. T. Minogue, 510 Granville St., Vancouver.—June, November—Vancouver 50.00

Manitoba: Manley Bowles, Winnipeg.—2nd Monday in January and July—Winnipeg 40.00

New Brunswick: F. A. Godsoe, 74 King St., St. John.—4th Tuesday in June and September—St. John 35.00

Nova Scotia: G. K. Thomson, Halifax.—May, and September—Halifax 50.00

Ontario: W. E. Wilmott, 96 College St., Toronto.—May, date selected—Toronto 40.00

Quebec: Eudore Dubeau, 308 Sherbrooke, Montreal.—April and October—Montreal 60.00

Saskatchewan: A. R. Weir, Saskatoon,—June or July—Saskatoon 35.00

Yukon: A. J. Gillis, Dawson.—Date fixed by Board—Dawson . 25.00

New Foundland: T. P. Smith, 203 Water St., St. John's.—First Tuesday in July—St. John's 50.00

Prince Edward Island: J. S. Bagnall, Charlottetown.—July and September—Charlottetown 25.00

Diplomas of recognized dental colleges registered without examination.

A WORD OF WARNING

By Paul S. Coleman, D.D.S., Wilburton, Okla.

All members of the Preparedness League should be careful of what they do for the drafted men. Make every effort to insert in the soldier's mouth work that will not cause any after trouble whatever, and if there is any doubt about a filling, crown or plate being perfectly satisfactory, DON'T DO IT.

It would be far better to extract any tooth that may likely at some future time cause trouble than to insert a root filling of which you are in doubt, and always bear in mind that imperfectly filled teeth will cause the future soldier trouble, whereas if he were to go his way in civil life probably no serious after effects would arise. The soldier, however, is a different case altogether. He sleeps where he happens to be, and often times he will endeavor to get a night's rest in two inches of water or under six inches of snow. He wades in mud and water for days at a time and is exposed to rainstorms, and shell fire disturbs the nervous system, and often it is hard to get food regularly and sometimes hard to get pure water regularly, all of which finds a lodging place at some weak part of the body, and if any of you have performed any criminally bad pieces of work remember you may have killed the soldier in your office, and that he only waits to get to France to make the final sacrifice.

Suppose for a moment that one of your boys is on outpost duty, and an aching molar is bothering him—"your molar, the one you slightingly filled." His mind will be more upon that molar than the enemy. His life rests upon the fraction of a second ofttimes, and it often happens that in the darkness a sentry's life is snuffed out with the aid of a battle mace or bayonet, and over here in the United States of North America some careless dentist, enjoying the comforts of his native land, may be the murderer of a whole battalion or regiment of his fellow men through some carelessly inserted dental appliance or filling.

It matters little that you are not drawing pay for your services. The whole question hinges upon doing your operations properly and with a view to strenuous wear and tear in the future. If you are not going to do it properly **don't do it at all.** If you have any doubts, **use the forceps. Don't under any circumstances leave anything which may possibly cause trouble later on.**

BUILDING THE STRUCTURE OF OUR LIVES

By the Editor

At the entrance of the little park in which I live, are two monuments built of white marble, one on either side of the street. They are tall and square and at first glance both appear as solid as the land upon which they rest. But they present an important difference which has become more noticeable as the years pass. The top or cap of one was properly formed and cemented; it has withstood the heat of summer and the frost of winter for ten years and is to-day practically as sound as when it was erected.

The other monument was apparently as well builded up to the very top but there the work was incomplete or careless. The expansion under the heat of summer and the contraction in the cold of winter, together with the solvent action of water and the splitting action of frost, have little by little worked their way into crevices in the carelessly finished top and have enlarged the openings, and have here and there split a piece away until the top of the monument is now a wreck and the rest of it promises to become such.

As I have watched the action of the elements on these two monuments one sturdy, strong, useful and ornamental, and the other a slowly crumbling ruin, these monuments have come to represent to my mind a picture of the lives of many dentists.

Two young men sufficiently alike in strength of character, intellectual ability, and aspiration, graduate from dental college. They start to build the monuments of their professional lives. One of them builds entirely with professional material, and what he builds pleases the eye. He serves a satisfactory number of people, lives in a comfortable house, wears good clothes and moves in good society. During the years of construction, the edifice is wholly fair.

The other builds with professional materials joined together with the cement of sound economics. For a time, what he builds may seem no more pleasing to others than the edifice which the first one built with professional materials only.

But when the rains descend and the floods come and increasing family and personal expenses, competition, illness, old age and reduced efficiency have beaten upon both monuments long enough, the difference in texture between them becomes very apparent. The monument in which the elements of professional service have been cemented together by sound economic principles withstands the strain and the storm. The sunshine of prosperity and the frosts of adversity do not split it apart.

There may never have been luxury but there is likely always to be comfort.

Under the strains of adversity, the monument built entirely of professional material crumbles like the ruin which I pass daily. Its elements were never linked together properly to withstand adversity in the present or reduction of earnings in old age. And after a few years of apparent success, and pleasing appearance, it goes down in partial or complete failure.

For many years those of us in the profession have been taught to build the monuments of our lives wholly with professional materials. One needs only to look beneath the surface of professional lives about him to see that this advice never was good and that it is apparently successful only through the earlier years of one's life. It can readily be perceived that for the average man such a course merely insures failure in old age if not before, and that in a great number of cases it has insured serious failure in every form of service to one's patients and one's self during middle life.

As I look at the other of the two stone monuments, so strong and secure, bright in the summer's sunshine or piled high with the winter's snows, I am glad that a new perception is dawning in the minds of those of us in the profession which will enable us to build our lives more solidly and securely; that we are learning that the elements of service make a better monument when joined together by the cement of sound economics; that really economic service is cheaper for the patient in the present and more profitable for us in the end; and that we shall best advance the welfare of our profession not by making of our lives monuments which crumble at a touch, but monuments which stand as well against adversity as in prosperity and as honorably in old age as in middle life.

Now, here's hoping—

"Ils ne passeront pas!"

PREPAREDNESS LEAGUE OF AMERICAN DENTISTS

NOTES AND NEWS

Communication from President Beach.—The Third Annual Meeting of the League will take place in conjunction with the meeting of the National Dental Association on August 7, 1918.

We are preparing a program of unusual merit and, on account of the great work which has been done by the League during the past year, a general report will be given which will cover the several activities we are engaged in.

Addresses will be made by prominent men on subjects appropriate to the occasion and during the sessions of the Convention, meetings of State Directors and general workers for the League will be held for the purposes of instruction and stimulation of interest.

What the Public Should Know.—Many drafted men apply to the dentist with the idea that the Government is paying for our services and that they have a right to demand expensive bridgework and other attention without limit. This has come about because of the semi-military procedure of sending the notices on cards franked by the War Department. Considerable embarrassment at times has been caused the dentist, and all local workers are justified in using legitimate means to acquaint the public of this misconception. It is also most essential that the public understand that all service given in the name of the League must be absolutely free. Accepting the smallest compensation aborts the spirit of the League and cannot be justified.

Our members have been asked to give each drafted man one hour of free service and whatever one chooses to give beyond that, the League is, of course, glad to receive. If it is deemed unwise to give additional service without fee, the patient should be discharged as having received that which is due him from the League, or advised to appeal to League Headquarters for assignment for further attention.

League Buttons.—We again urge all members to wear the League button as an indication that they are actively engaged in preparing our drafted men for service. Those not having the button may secure one by sending twenty-five cents to the Treasurer, Dr. L. M. Waugh, 576 Fifth Ave., New York, N. Y.

The League Study Course.—The League study course is designed for the mature practitioner to prepare him to give adequate service to our soldiers who have been injured in battle. Many thousands will return needing our best care, therefore it is our duty and privilege to give every assistance possible in this direction. The course will be practical in character and approved by our best authorities. Information may be obtained by addressing the office of the President, 131 Allen St., Buffalo, N. Y.

Lantern Slides.—The League has prepared 25 sets of slides which have been distributed to the different State Directors to be used by Sectional Units and Dental Societies in general. The public also may find much of interest in viewing these pictures. Each set is practically divided into two parts, one set arranged by Major Heckard, comprising nearly 90 slides, and traces the plans and developments of the great work of caring for the drafted men. The evolution of the different form cards together with their application is graphically depicted and is of especial benefit to Directors and members of the League generally. Every District Director should show these slides to his workers.

The second set of about 35 slides was arranged by J. W. Beach and aside from conveying general information of the League and its work, gives special emphasis to the wonderful Dental Motor Car of the League in a series of most interesting pictures. These are available through the State Directors. There is a lecture in synopsis form accompanying each set of slides.

J. W. Beach.

Communication from Maj. Heckard.—I am in receipt of your communication of June 7th congratulating me on the change I am making, and asking that I write "a short good-bye letter to the boys of the League for publication in the Magazines." I will make it read "members" because there are a good many women dentists giving Free Dental Service.

At this time I can simply state that my request to be relieved of the supervision of the Preparedness League of American Dentists and assigned to further Military Duty having been granted and before I report

to the Officers' Training Camp, Camp Greenleaf, Chickamauga Park, Georgia, I would like to thank the officers and members of the Preparedness League of American Dentists and all other persons who helped to make Free Dental Service possible for the men of our New National Army.

I do not consider this work much more than started although we have reported at this office nearly 400,000 operations to date. I feel confident that with the same coöperation and support which has been given me, continued, the League will very soon be able to report 1,000,000 free dental operations.

I hope the day is not far distant when every American Dentist will be a member of the Preparedness League of American Dentists.

Fraternally yours,

W. M. HECKARD.

THE TROUBLE WITH SOLDIERS' DIET

The American soldier is said to have a finer bill of fare than the soldier of any other army. It is very doubtful, however, whether in the long run it will sustain life better or maintain health better than the diet of the Russian soldier for instance.

The trouble seems to be just as it is with the sailor who has no green food, that the oatmeal, bacon, beef and bread do not contain enough green vegetable food and fruit to make it a complete diet.

A press dispatch from London shows that the English Quartermasters' department has recognized this and is soon to provide for troops at the front an additional ration known as "trench salad."

It is a special trial issue of fresh vegetables, including beets, carrots and turnips. A salad grater will also be supplied to enable the soldier to make his own salad on the spot. The idea is indorsed by the medical authorities, because it is hoped the salad will reduce the number of cases of such diseases as dysentery, rheumatism and trench fever.

This fare will go far to lessen the evil effects of canned and other undesirable foods, lacking in the organic salts.

The great increase in the number of home vegetable gardens is doing a good deal this year to improve the diet of the great mass of Americans. —*The Healthy Home.*

DENTAL INFIRMARY AT CAMP MEAD, MARYLAND

This photograph shows the operative section of the Dental Infirmary at Camp Mead, Maryland. Each dental surgeon has a complete up-to-date equipment and an enlisted man detailed as an assistant. These dentists are doing a big bit toward the winning of the war. All honor to them.

DENTAL ECONOMICS

STEPS TO VICTORY

SAVING

In the period of the war there are two things to save. One is material. The other is money. Material not bought by a private citizen for his private use is left for use of the Government. Money saved by a private citizen, when material is not bought, and when that money is turned over to the Government, gives to the Government power to secure the material that is automatically released by the private citizen's saving.

Saving in war time is simply a diversion of the buying power of money from the individual to the Government. As a general proposition saving is a hard matter to define, for the application of the term involves certain contradictions. It is a familiar axiom that he who spends money wisely, saves, while he who saves money wisely, spends.

We cannot afford to argue against spending. The hoarder is a loss to the community and to himself. We can afford to argue for spending. Spending for the war. We need to save money when that means saving commodities.

Let us keep the distinction clear. Every dollar that is expended for any purpose is of course put in circulation. If it is paid for something needless it prevents so much labor or material or goods from being used for the nation's necessities. But if it is paid for something that is essential to the war it applies just so much additional support toward supplying the nation's necessities. A wise and courageous handling of the situation that confronts every man, woman and child of the nation will pay, both directly and indirectly. The curtailment of one's personal expenditures, when that transfers buying power from the individual to the Government, benefits the individual, benefits the Government, and benefits the people as a whole. For by that curtailment the individual has set for himself a healthier and saner standard of living. He has ceased competing with the Government in bidding for goods and for labor. He has surrendered something for others.

Thus, by patriotic service, he has effectually served to enrich himself,

to check the rise in prices, to cheapen the cost and speed the progress of the war, to reduce the need for tax levies and bond issues, and to make life less of a burden for his poorer neighbors.

The concentration of energy for winning the war is the highest motive that can dominate our lives to-day. With this thought before us, we can, therefore, properly reduce our material wants to a minimum. We can save on our table. We can make sure that our clothing is no longer serviceable before we purchase more. We can economize in coal and light. Exactly as we save will there be more food, cloth and fuel for the uses of war.—*The Mechanics and Metals National Bank of the City of New York.*

SELLING THRIFT

By Ellis Parker Butler

Up to the day when the first Liberty Loan was put on sale, Benjamin Franklin was the greatest apostle of thrift in America, his maxims from "Poor Richard's Almanac" being the best thrift propaganda extant. Unfortunately Benjamin Franklin represented a long past day. His thrift idea can be pictured as that of a man slowly drawing pennies toward himself—"A Penny Saved Is a Penny Earned." It suggests meager earnings, careful economy, patient hoarding. America long since hurried on to a period of big earnings and consequent carelessness of expenditure. We became a nation of buyers and, consequently, a nation of sellers. Salesmanship has, especially of late years, taken high rank among us. It has almost come to a point where we no longer say "Is this an article that can be sold?" but "Is there a salesman that can sell this article?" The salesman is now, more than ever in the history of the world, an important person.

A wise man, seeking to translate us from a nation of spendthrifts into a nation of thrifty men and women, would do exactly what the government has done. We are not a nation of savers, we are a nation of spenders. It is in our blood. Acres of publicity can not change us. We don't want to save; we want to spend; we want to buy. A wise man would go to the salesman, who sells all these things the people buy, and ask, "How can you make these people thrifty?" The salesman would say, "The only way I can help is to sell them thrift." "How can you sell thrift?" "Well, I'll tell you. You think of some way of putting thrift up in small packages, and put it in my hands, and I will do the selling.

I will sell thrift to the people of America whether they want it or not; that's my business."

Exactly this is what the government has done. It has put thrift in small packages, in $5 War-Savings Stamps and in 25 cent Thrift Stamps. It has furnished something for the people to **buy,** something the salesman can **sell.** It has hooked the tremendous car of modern commercial salesmanship to Benjamin Franklin's old thrift chaise.—*Pioneer Bulletin.*

WHY NOT A CIRCUIT OF STATE MEETINGS?

Could anything be more logical and desirable than a circuit of State Meetings? Certainly not to those who have wrestled with the problem of trying to pick dates for a meeting that would not conflict with those of the neighboring States, or trying to secure clinicians when two or three nearby states have set the same time for their meetings. The larger State Societies experience little trouble as the very size of their meetings enable them to secure those they desire as lecturers and clinicians, as well as exhibitors. Not so with the smaller societies, where there is a conflict in dates with their larger sisters.

As a suggestion consider a circuit as follows, meeting to follow as rapidly in succession as deemed feasible: Illinois, Missouri, Oklahoma, Kansas, Nebraska, Iowa, Wisconsin, Minnesota, South Dakota, North Dakota.

Preferably the meetings should start in the southern end of the circuit in the early colder months, and work north as the season advanced. And the circuit could easily be made larger or smaller as desired. With no conflicting dates, there would be no trouble in arranging for clinicians and essayists or securing a good list of exhibitors. And a good exhibit is certainly a drawing card at any meeting. Every one goes to a meeting with something new in mind which he wishes to look up. Who will lead us out of the wilderness?—*Bulletin South Dakota State Dental Society.*

THE ONE-MAN BUSINESS

The consideration which is being given in the Man Power Bill to one-man businesses has caused the claims of another equally deserving class to be overlooked. This is the professional man, working without a partner whose capital is his brains and experience. When he joins the Colors his entire future is jeopardized, while there is always the possibility of a one-man business being kept going in its owner's absence, or at worst he can realize something for stock-in-trade and goodwill. The professional man is not so fortunate.—*The Dental Surgeon,* (Eng.)

C. M. CARR PATENT VOID

UNITED STATES COURT DECREES PATENT ON PYORRHEA TOOLS INVALID

Dentists everywhere will be interested in learning that certain litigation of great importance to the profession has just terminated. The result is a complete victory for the Dental Protective Association of the United States, which, in carrying out the objects of its charter, successfully assumed the defense of a case brought against one of its members.

The Carr School of Preventive Dentistry and Medicine, assignee of Cassius M. Carr, brought suit against Dr. Austin F. James, of Chicago, in the U. S. District Court for the Northern District of Illinois, Eastern Division, for alleged infringement of the Carr patent on Pyorrhea tools and for unfair competition in trade. On Tuesday, July 2, 1918, His Honor, Judge George A. Carpenter, entered a final decree adjudging as invalid, void, and of no effect in law these Letters Patent known as No. 1,138,355, issued May 4, 1915 to Cassius M. Carr, on Dental Tools, and which the patentee purports to exemplify in a set of one hundred fifty tools, well known as the Carr Pyorrhea set. The suit was ordered dismissed for want of equity at the plaintiff's costs.

The importance of the case arises from the establishment of the right of all dentists to avail themselves of instruments of the type described in the patent, in larger or smaller sets, without paying patent tribute to anyone. The Dental Protective Association of the United States conceived that the patent sued on was not a good patent in law, and that its existence could be made, and was likely to be made, the basis of serious oppression to dentists, especially in view of the numerous suits already brought under it. The suit against Dr. James was one which the Association considered to be of that character. The Dental Protective Association has consistently fought to protect its members from unjust and unlawful patent claims, and makes no distinction in this respect between patents for mechanical devices and patents for processes or methods. While its chief obligation is to its members, such results as come from its success in the present case will inure to the benefit of the profession as a whole.

A vast amount of testimony was taken by both parties to the suit, the plaintiff having thirty-six witnesses and the defendant twenty-five. For the defendant a large number of the most prominent teachers and practitioners on the subject of Pyorrhea gave valuable testimony.

The defeat of the Carr patent ought to relieve many dentists from the annoyance of litigation which Carr or the Carr School has threatened to

institute. The air is cleared and dentists now are justified in treating the patent as though it did not exist.

In passing it may be mentioned that a suit brought by Carr against Dr. Thomas B. Hartzell of Minneapolis, on the same patent, was defended by the Dental Protective Association, and was also dismissed at Carr's costs.

The Association's attorneys are Mr. Percy B. Eckhart of Chicago, general counsel, and Mr. Luther Johns, of Chicago, patent counsel. We express our appreciation of their very thorough preparation of the case and its successful defense.

(signed) DENTAL PROTECTIVE ASSOCIATION OF THE UNITED STATES.

By J. G. Reid
D. M. Gallie } DIRECTORS
J. P. Buckley

SPENDING AND HELPING THE ENEMY

Uncle Sam needs twenty billions of dollars or so this year for the war.

What does Uncle Sam do with this money? He spends it just as you and I spend our money.

What does he spend the money for? For ships, guns, shells, clothes and food for the soldiers and sailors, and for many other things needed to carry on war.

What do you and I spend our money for? For houses to live in, food to eat, clothes to wear, and for many other things of greater or less use to us.

But some of the things we want are exactly the same things Uncle Sam wants, and some of the other things we want, while not exactly the same as the other things Uncle Sam wants, require, in order to be made, the raw material, labor and transportation facilities that are also required for making the further things that Uncle Sam must have.

Uncle Sam could not perhaps use your new suit. But he could have used the wool that is in it, the labor that fashioned it and brought it to market, and the transportation agencies that were necessary to carry it.

Hence, every time you buy something that you do not positively need you are selfishly withdrawing from service to Uncle Sam raw material and supplies, labor and transportation.

There is available only a certain amount of raw material of all kinds; labor can be pushed only to a certain limit, and beyond maximum capacity nothing further can be expected from the railroads.

Before the war, we used everything to cater to our own private needs. Now, about one-half of all that we can produce must be put aside for war purposes. If that is to be done—and it must be done if we are going to win—everybody must do his "bit."

We cannot eat our cake and have it too! We cannot insist upon eating and dressing and having a good time as before, and expect our government to put up a winning fight. When we save, we stop competing with Uncle Sam—and that means with the boys in the trenches.

Better still, when we save and put our savings in Thrift and War Savings Stamps, we are saying to our boys in the trenches, "Here, boys, count on me. Here is food and clothing and medicine. If this is not enough, I'll do even better."

The *best way to do "even better"* is by joining a War Savings Society. Then in "our crowd," in "our shop," in "our office," we will learn to do without by all agreeing to do without the same things.

War Savings Society Bureau
National War Savings Committee
51 Chambers Street, New York City.

A FAMILY AFFAIR

Sing a song of sweet corn,
A garden full of chard,
Four and twenty eggplants
Growing in a yard.
When the crops are gathered
The folks can have some lunch;
Isn't succotash a dish
To set before the bunch?

Father's tending beets and chives,
Saving us some money,
Mother's out among the hives
Taking off the honey;
The kids are in the garden
Pulling out the weeds.
Don't we get a lot of food
From half a peck of seeds?

THE BEST OF CURRENT THOUGHT

(*The Dental Review*, July, 1918)

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The Present Status of Prophylaxis and Periodontia. President's Address. By John Oppie McCall, D.D.S., Buffalo, N. Y.

The Rational Treatment of Pyorrhea. By Arthur H. Merritt, D.D.S., New York.

A Consideration of the Physiology of the Mouth Tissues in Treating Diseases of the Same. By Hugh W. Macmillan, D.D.S., Cincinnati, Ohio.

Dental Periclasia, Showing Regeneration of Bone By Frank C. Pague, D.D.S., San Francisco, Cal.

DR. BLACK

"THE VISION AND THE FACULTY DIVINE"

We have the blessed memory of what he was and what he did; and having this we gain a consolation for our hearts, and a consecration for our minds. In all the realms of human kind no man ever more perfectly filled his particular niche in the world than did Dr. Black. The most we can do is to try to follow where he led, and to profit daily by the life-long example he set.

In the history of nations, in the record of events, in the evolution of great movements, in the fruition of reforms, certain names must ever stand out as representing conspicuous forces in the progress of the world; and when the history of dentistry shall have been written, however far in the future the record be made, no name will shine with greater luster in all the galaxy of noble men who have gone before than that of Greene Vardiman Black.—C. N. JOHNSON, D.D.S.

He believed in his profession. Can anything more sad happen to a man than to live all his life in doing something in which he does not heartily believe? Dr. Black had no doubt that dentistry was worth while and worthy of him and his best efforts. So far as I knew him, he was not much concerned over the financial advantage his work rendered him, but he was profoundly convinced of the blessing that Dentistry might confer upon humanity. He was a scholar uniquely fitted for the particular field in which he worked. He had imagination, without which creative scholarship is almost, if not quite, impossible; he had a keen, logical efficiency; he had boundless industry; and with all these qualities he had a consuming interest in his work. His liking for his profession, his courage and scholarship made him a great power, and, like Chaucer's priest, the way he pointed out to others he first went himself.—A. W. HARRIS, President, Northwestern University.

He had an insatiable desire for knowledge, he was a good listener, was open-minded, and seemed able to extract something of value from almost all with whom he came in contact. He could adapt himself to all classes of men, be they fishermen, logmen, or men of letters and refinement.

Whether college or nature bred, if they had facts of practical value to present, they were sure to evoke his lively interest. He was an assiduous reader, he observed accurately, and he was a profound thinker. It may truly be said of him that his was a diversified mind, richly stored with knowledge of a multitude of subjects. On account of his accurate methods he rarely had to retrace his steps in his writings and discussions, but was ever ready to give considerate attention to any who showed a live interest in any line of human activity. My association with him for forty odd years has never caused me to doubt his worth as a man and friend.—THOMAS L. GILMER, D.D.S.

Dr. Black was a born investigator. For him to study, was to follow original lines, while he never rested until he had found everything he could get his hands on relating to his subject in English, French, and German. He always went to work as if no one else had ever attacked the field.

The most wonderful thing about Dr. Black's scientific career was its simplicity. He studied to find some explanation of the things he could not understand, or some knowledge by which to improve the methods of his treatment, and when he had found a new truth he thought everyone would be as glad to hear it as he had been to find it.

"Until the future dare forget the past
His life shall be a lantern and a light unto eternity."

FREDERICK B. NOYES, D.D.S.

INSURING OUR SOLDIERS

All ranks of the American expeditionary forces appreciate deeply the generous measures the Government has taken to provide insurance for their families, in proof of which more than 90 per cent. of the men have taken out insurance. To wisely provide for their loved ones heartens and strengthens the bonds that unite the army and people in our strong determination to triumph in our most righteous cause.

The War Risk Bureau announced a record breaking rush of applications in a single week recently which brought in more than $1,000,000,000 of insurance.

Up to July 1st the total amount of insurance on the books of the bureau was $21,565,699,000.

AUTOMOBILE STATISTICS

Speaking seriously, it is no longer a mystery why the Dental Profession has lost control of the world's finances. If the automobile people continue to grow, which they threaten to do, there's no knowing where money for other enterprises of the world is to come from, as the following statement shows.

These remarkably interesting statistics are to be found in a pamphlet entitled "Wonders of the Automobile Industry," just issued by the National Automobile Chamber of Commerce. It is shown that the number of employees in the industry is 830,000 and that they and their dependents would populate the city of Chicago or Philadelphia, Boston and St. Louis combined or any one of twelve States or of seven States combined.

The wages paid annually, $747,000,000, are approximately equal to all the gold in circulation in this country.

The capital employed, $1,297,000,000, is greater by $250,000,000 than that of all the national banks, greater than the combined capital stock of the Pennsylvania, New York Central, Chicago and North Western and the Chicago, Milwaukee and St. Paul railroads, and is more than twice as great as the capitalization of the Standard Oil group of thirty-five companies, also four times as great as the combined capital of all the steel companies with the exception of the United States Steel Corporation.

The number of passenger miles by automobile is not less than 10,000,000,000 greater a year than that of the railroads.

The seating capacity of automobiles is 25,000,000 persons, compared with 3,500,000 for the railroad cars. If the railroads would undertake to handle the number of persons now carried by automobiles it would require duplication of all of their passenger locomotives and cars, at a cost of more than $1,000,000,000, as well as duplication of its passenger tracks, depots and employees at an expense impossible to calculate.

Assuming that our army of 1,000,000 men had been mobilized on the first day of October, our automobiles, traveling at the rate of 100 miles a day, with four passengers to a car, could have carried every man in the army 600,000 miles up to the end of May.

It is shown that farm values during the sixteen years after the introduction of the automobile increased at three times the rate of the previous twenty years, despite the fact that the rate of increase of population, and particularly of farm population, decreased in the later period.

Assuming that the farmer uses his car an average of only ten miles a day and that he is the only passenger and that his car was taken away and a horse substituted, the result would be an aggregate loss to our farmers of 300,000 years in every year.

THE USE OF SUGGESTION IN THE PRACTICE OF DENTISTRY

An informal talk by Dr. R. Denney, Philadelphia, before the Philadelphia Alumni Chapter, Psi Omega, Fraternity

I want to talk to you to-night about Suggestion, the thing that makes diplomats great, the thing that makes salesmen successful, the thing that makes every one who consciously employs it greater and more powerful in his influence with his fellow-men.

Suggestion in the broadest sense of the word is the influencing of the mind of one individual by another. More definitely stated, it is the intrusion into the mind of an idea, met at times with more or less resistance but acted upon at last unreflectively—almost automatically. Hypnotic Suggestion is the accomplishment of this while the subject is in a hypnotic state. With Hypnotic Suggestion we as dentists have little need. There are so many reliable anaesthetics as to make its use for that purpose entirely unnecessary. The popular although erroneous idea that once hypnotized the subject remains more or less under the influence of the hypnotist ever after, would also rise to distrust on the part of the patient and destroy that confidence which is so essential to the successful rendering of those difficult services which we are continually being called upon to give. But we have much use of suggestion when the individual is in a normal state, and a thorough understanding of how to employ it would solve many of the problems which confront us in the management of our patients.

DIRECT OR INDIRECT

By direct suggestion is meant a clear, definite statement or command such as "You cannot now feel pain," or "You cannot now bend your arm." The greater the inability to coördinate thoughts and actions, the more effective is direct suggestion and it is therefore more effective in cases of hypnotism and drunkenness.

By indirect suggestion is meant the employment of suggestion by inference. I hold a newspaper in my hand and begin to roll it up; soon I find that my absent-minded friend sitting opposite me is rolling his up also. This is indirect suggestion at work. I hear someone hum a few bars of an old song; shortly after I find myself absentmindedly whistling the same tune. Coming back to the realization of what I am doing I wonder what started me on that almost forgotten air. These are examples of indirect suggestion and it is the kind of suggestion that we can employ successfully in our every day work.—*The Dental Quarterly.*

A PRELIMINARY REPORT UPON THE TEMPORO-MANDIBULAR ARTICULATION IN THE HUMAN TYPE

By H. J. Prentiss, M.D., Iowa City, Iowa

Anatomical Laboratory, University of Iowa

The bony structures entering into the temporo-mandibular articulation are the glenoid fossa and the eminentia articularis of the squamous portion of the temporal bone above and the condyle of the mandible below. Between the temporal surface and the condyle is interposed a fibro-cartilage called the meniscus. Such a fibro-cartilage is present wherever is found one bone moving over a considerable surface of another—otherwise there would be a rattling around in the joint. Besides the mandibular articulation we may instance the sterno-clavicular and femoro-tibial or knee joint. In the latter case we observe the tibia moving around the condyle of the femur as the leg is flexed or extended. This articulation has two purposes, one to carry the weight of the body as we stand erect; the other, flexion of the leg upon the thigh in walking—a very different function indeed.

The inferior surfaces of the condyles of the femur are arcs of large circles, so large that they present almost a flat surface for carrying the weight of the body in the erect position (Fig. 3). The posterior surfaces of the condyles rapidly diminish, developing the arcs of circles of small radii (Fig. 4). This is to facilitate rapid flexion of the tibia upon the femur, as no weight is carried in this position. The tibial articular surfaces do not vary, so that the same tibial surfaces are in apposition to the arcs of the small circles as well as the arcs of the large circles. This would naturally result in great irregularity in the movements of this joint if nature did not provide some means to adjust the condition, which she has accomplished by developing the meniscus. If we study the early embryonic lower extremity, we observe that the mesenchyme at the site of the future knee joint differentiates into the anlage of the fibro-cartilage, with two spaces separating it from the anlage of the femur and tibia (Fig. 1). This beginning fibro-cartilage becomes a true meniscus separating the femur from the tibia.

At birth (Fig. 2), we observe that centrally the cartilage has disappeared, leaving a circular opening; this is relatively a small opening as compared with the condition in the adult joint. Undoubtedly this early atrophy is due to powerful muscle pull, as of course no weight has been brought to bear on these surfaces. In the adult this meniscus has become

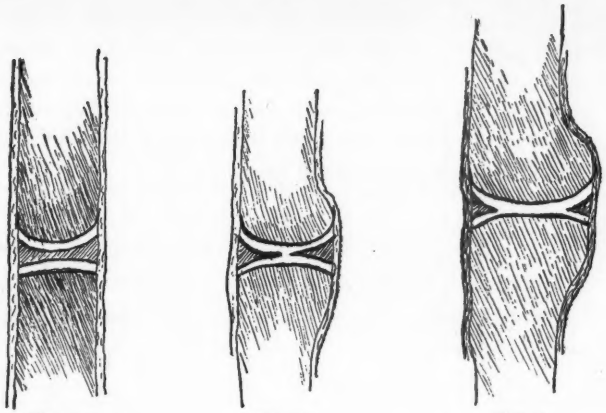

Fig. 1 Fig. 2 Fig. 3

Fig. 1. Early Embryo, showing meniscus at site of knee joint.
Fig. 2. Knee joint of child at term, showing foramen in meniscus.
Fig. 3. Adult knee joint. Leg extended, to show position of semilunar cartilage.

a ring of fibro-cartilage, with a large central opening. This ring of cartilage is called the semilunar cartilage (Figs. 3 and 4). I think we can interpret this as due to the great pressure brought to bear in assuming the erect position; for, as we know, fibro-cartilage or any adult cartilage is non-vascular, and will therefore easily retrograde if undue pressure be brought to bear. This retrograde process in the knee joint is normal.

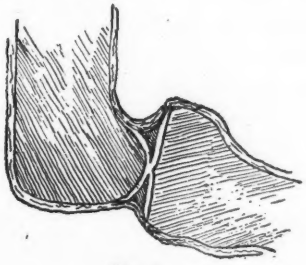

Fig. 4

Fig. 4. Adult knee joint. Leg flexed, to show migration of semilunar cartilage, thus keeping opposed surfaces in apposition

It may be of interest to note the significance of this condition in this joint. With the tibia extended on the femur as in the upright position, the semilunar cartilages are pressed to the extreme periphery of the articular surface, and the large arc of the circle on the femur is in continuous apposition with the tibia plus this cartilage, which in a sense acts as a stuffing to keep everything snug. With the tibia flexed (Fig. 4) the small

arc of the circle on the femur is applied to the same large surface of the tibia. Here again the analogy of the stuffing applies, for air-pressure forces the semilunar cartilages inward as the lesser surfaces recede from the greater, so that again continuous apposition is accomplished. We see, therefore, in the knee joint a retrograde absorption of the meniscus which is necessary to the normal function of this joint.

Fig. 5

Fig. 5. Condyle in glenoid fossa. Lower part of stylo-mandibular ligament tense, to prevent backward displacement of condyle.

Fig. 6

Fig. 6. Condyle over eminentia articularis. Upper fibers of stylo-mandibular ligament tense, to prevent forward displacement of condyle.

The sequence of events just followed in this joint may be traced in the mandibular joint, only here it becomes pathological with the loss of teeth. This joint differs from the knee joint in the fact that by the eruption of the teeth the surfaces are kept apart, and with their loss the muscle pull approximates these surfaces with atrophy of the meniscus. The condyle of the mandible glides over the eminentia articularis from its resting position in the glenoid fossa (Figs. 5 and 6). Therefore a meniscus develops.

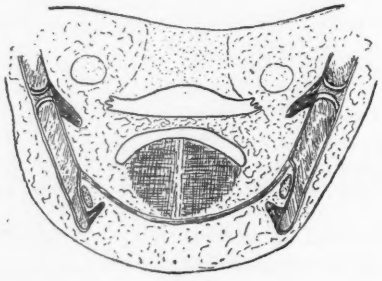

Fig. 7

Fig. 7. Coronal section of a five-month fetus, showing the mandibular articulation with the meniscus well formed. External pterygoid attached to this joint. Soft palate separating nasal Pharynx from buccal cavity.

Fig. 7 is a section of a fetus about five months old. Note the meniscus, and how well the musculature is developed. At birth, though the teeth have not erupted through the buccal epithelium, yet they are present, and the alveolar processes of the maxilla and mandible are large, so that the condyles are prevented from pressing against the temporal articular surfaces. Therefore the meniscus is not obliterated, but persists as a continuous fibro-cartilage. With the loss of teeth the alveolar process resorbs, and the condition of the semilunar cartilages is simulated. However, the fibro-cartilage of this mandibular joint does not show the marked thickening and thinning which we find in the adult (Fig. 8).

In the adult the molding of the meniscus is very pronounced (Fig. 9).

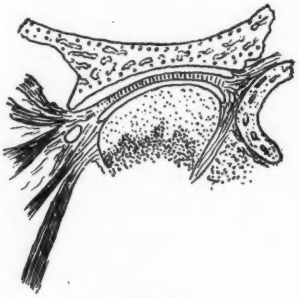

Fig. 8

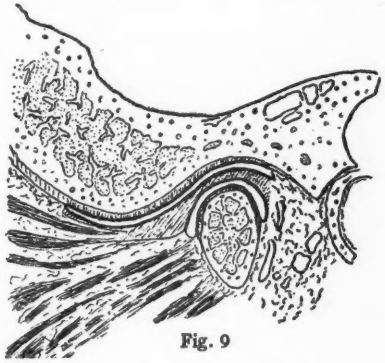

Fig. 9

Fig. 8. Histological section of Mandibular Joint at term. The condyle is almost globular. The eminentia articularis is but a ridge. The meniscus shows little molding. Drawn to twice the normal.

Fig. 9. Histological section of adult mandibular joint. Meniscus well over the eminentia articularis. Marked molding on under surface. Upper head of external pterygoid attached to meniscus; lower head attached to neck of condyle. (Compare with photomicrograph, Fig. 18).

In the glenoid fossa the meniscus is thick, thinning out on the dorsal surface of the eminentia, but becoming thicker in front of the thrust of the condyle (Fig. 9). This condition is due to the eruption of the teeth withdrawing the mandible from the maxilla, and therefore the condyle from the temporal surface. As early cartilage is relatively vascular, we may conclude that there is a hyperplasia due to the erupting teeth relieving the meniscus from pressure.

In a dry skull with perfect teeth (Fig. 10) the condyles are separated from the temporal surfaces when the teeth are in occlusion. A wax mold may be made which is a perfect model of the fibro-cartilage, with the thick portion in the glenoid fossa and the thin portion over the eminentia.

This beautifully illustrates how the teeth relieve the meniscus from pressure and consequently from atrophy.

EFFECT OF LOSS OF TEETH UPON THE MENISCUS

If, however, the teeth are removed, the condyle is pulled upward by the powerful musculature, and pressure is brought to bear upon the meniscus with a resulting atrophy varying from a small opening to a ring of cartilage in many ways resembling the semilunar cartilages of the knee. This pressure in old cases is carried to such a degree that not only is the hyaline articular cartilage covering the condyle and the temporal surfaces destroyed, but also the bones themselves show marked pressure atrophy (Fig. 11). Here the glenoid cavity is so excavated that

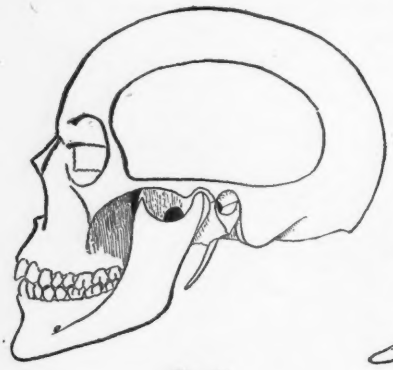

Fig. 10

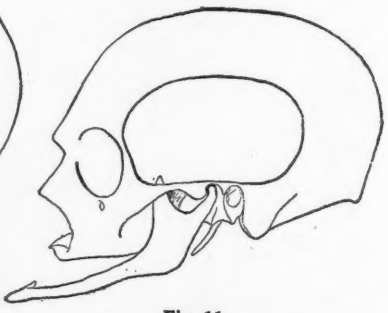

Fig. 11

Fig. 10. Adult skull. Perfect occlusion. To show normal separation between condyle and glenoid fossa with jaw closed.

Fig. 11. Adult skull. Complete absorption of alveoli of the upper and lower jaws. To show condyle absorbed on its eminentia side, having developed a false joint at this point.

the plate of bone between the condyles and the brain cavity is practically nil. (Note how the neck of the condyle has been excavated by pressure on the eminentia, indicating that there has been a loss of any gliding motion, and that the condyle only rocks in the glenoid fossa.)

This department has observed this condition of varying atrophy for some time, and this spring Dr. Richard Summa, professor of prosthetic dentistry and orthodontia in the dental college of the University of Iowa, visited the anatomical laboratory to carry farther our observations. He observed the condition of the teeth in the various cadavers, made an estimate of the pressure on the meniscus, and then we dissected the joint. In every case we found pressure atrophy where it was expected. Again, when loss of teeth was unequal on the two sides we found unequal atrophy

of the two fibro-cartilages. Fig. 12 shows sketches of a number of these cases.

ANATOMY OF THE TEMPORO-MANDIBULAR ARTICULATION

As to the anatomy of the joint, with emphasis upon the meniscus, the meniscus extends from the anterior limits of the eminentia articularis backward to the Glaserian fissure, to which it is loosely attached by the capsule (Fig. 9). On its upper or temporal surface this meniscus presents a continuous smooth surface, permitting it to glide freely forward. At its limits it is attached to the temporal bone by a loose capsule. Its under surface presents a very different picture; it is divided into two portions, an anterior part into which is inserted by strong fibrous fasciculi the external pterygoid, and a posterior, rather shallow smooth concave surface for lodgment of the condyle of the mandible (Figs. 9 and 13).

Note in front of the concave surface a thick portion of the meniscus preventing forward displacement of the condyle on the meniscus. The capsule at the neck of the condyle is attached to the periphery of this posterior smooth surface, thus confining the condyle to this portion of the meniscus, and this portion only (Figs. 9 and 13). The articulation between the condyle and the meniscus is therefore a condyloid joint. At the same time the meniscus glides forward, due to the direct pull of the external pterygoid. We can say, therefore, that the mandibular articulation is a gliding condyloid joint (Figs. 5 and 6).

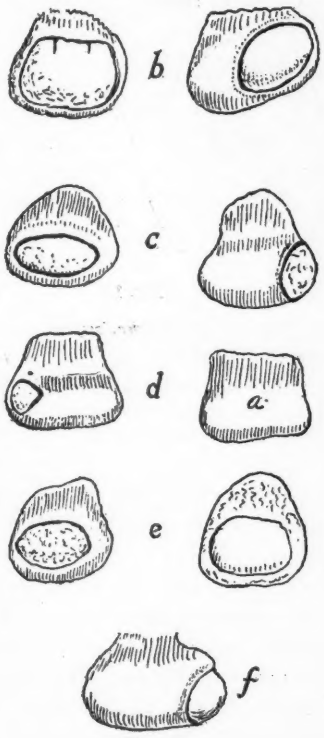

Fig. 12

Fig. 12. A, intact meniscus viewed from above. B, right and left from same specimen; to show unequal absorption of the two sides of the meniscus. C, similar to B. D, right and left from same jaw; showing absorption of but one meniscus. E, similar to B and C. (Great necrosis of bone). F, single specimen.

In the specimens sketched (Fig. 12) some show a complete atrophy, excepting anteriorly, where the pterygoid is attached; others show a ring of cartilage persisting, of various degrees of thickness; from these they show changes down to a small opening.

These cases of lesser atrophy, as Dr. Summa pointed out, begin at the lateral limit of the meniscus, and then they pass inward to involve the entire meniscus.

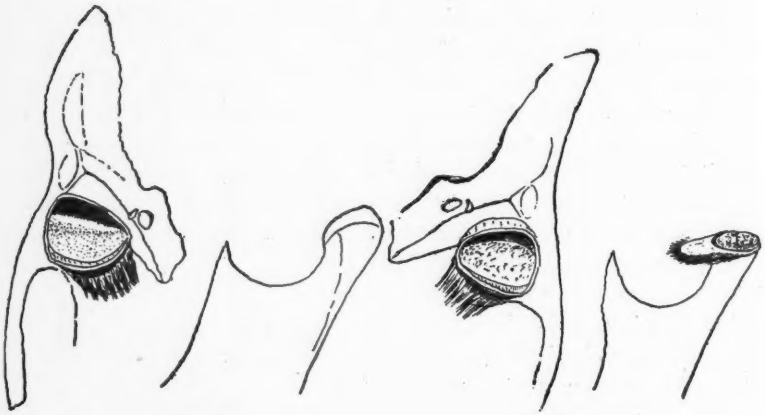

Fig. 13 Fig. 14

Fig. 13. Viewing meniscus and capsule from beneath. The condyle on right has been removed. (Norma.)

Fig. 14. View similar to Fig. 13. Here the meniscus in the glenoid fossa has absorbed away, leaving the capsule and pterygoid muscle attachment. To left shows the ring of the meniscus with much-eroded bone of condyle.

If we examine the condyle we note that the articular surface abruptly turns downward at the lateral aspect or where the condyle is broadest (Figs. 15 and 17). This is probably due to the tilting of the jaw during lateral motion, as the condyle of one side is depressed when passing over the eminentia (Fig. 17). Again, though the glenoid fossa is wedge-shaped, being narrow medially and broad laterally, and the condyle is also narrow medially and broad laterally, we note that there is considerable play posteriorly at the lateral limit (Fig. 15). That is, though the inner aspect of the fossa and condyle is closely approximated, the lateral aspects are not, the posterior surface of the condyle in this lateral region not being in apposition to the glenoid fossa in the region of the post-glenoid ridge (Fig. 15). This probably permits posterior displacement of the lateral portion of this condyle as the opposite condyle moves forward and inward over its eminentia articularis. In other words, the centre of rotation is not at the extreme lateral limit of the condyle, but approximates the place where the neck of the ramus joins the condyle.

We therefore have a lateral short arm passing backward as the medial long arm passes forward (Fig. 16). The result is that a twisting move-

ment is applied to this lateral portion of the meniscus, so that marked pressure is applied to this point with loss of teeth. This may account for pressure atrophy beginning at this lateral point.

This department is experimenting with dogs in an effort to determine

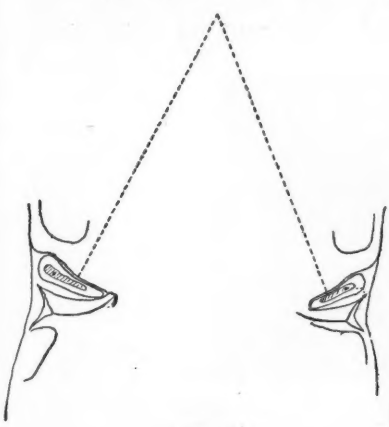

Fig. 15

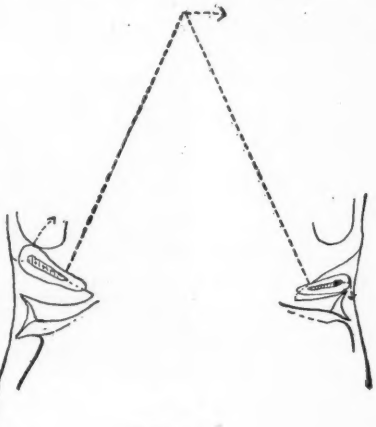

Fig. 16

Fig. 15. View from below of glenoid fossa, eminentia, etc., with only the condyles fitting snugly against the eminentia, but allowing free play laterally, backward. The apex of the triangle is at the symphysis mentis.

Fig. 16. Same view, but with condyle on the left moved on the eminentia but the lateral aspect of the condyle on the right rotated backward.

the rapidity with which fibro-cartilage will atrophy under pressure. I hope to make a final report on this matter. As far as I can judge, these observations point out to the dentist that the moment pressure is brought to bear on the mandibular articulation by loss of certain teeth, immediate

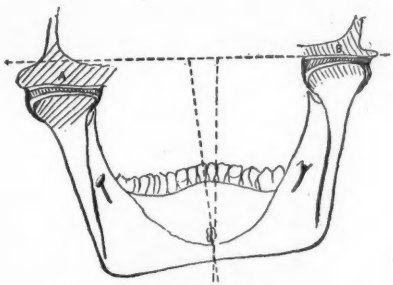

Fig. 17

Fig. 17. Schema. On the left, condyle depressed by eminentia articularis; on the right it is still in glenoid fossa. To show molding of the meniscus on the right and rotation of condyle due to tilt of the jaw.

steps should be taken to prevent retrograde changes in the joint. If our experiments on the dog are successful, it will give the dental technician some knowledge as to the leeway given him in preventing loss of tissue.

As to the mechanism of the mandibular movements, I would refer you to an article by Dr. Frederic Lord, professor of anatomy at Dartmouth College, in 1913, who visualized them in the laboratories of the State

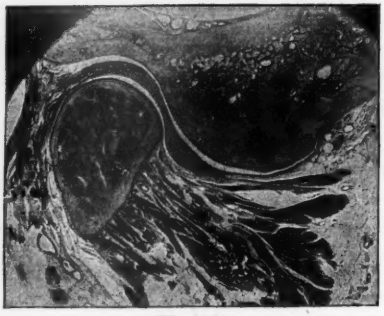

Fig. 18

Fig. 18. Photomicrograph of section of adult mandibular articulation. (Compare with pen-and-ink sketch, Fig. 9).

University of Iowa. Under the present procedure, as I understand it, the dentist prepares his artificial dentures when there is a partial or a complete loss of the meniscus; the result is, that instead of the condyle being in apposition with a smooth gliding meniscus it projects into a cavity. The first condition may be likened to a man being drawn forward while sitting in a smoothly running buggy; the second condition may be likened to the result of a runaway, when the buggy is destroyed and the individual, entangled in the lines, is bumped over the ground. Lastly, and with hesitancy, I might say the dentist in making his plates seems to me like a mechanic who adjusts the lock of a door when the hinges are off.

—*The Cosmos.*

THE IMPORTANCE OF THE INTER-ARTICULAR FIBRO-CARTILAGE OF THE TEMPORO-MANDIBULAR ARTICULATION

By Richard Summa, D.D.S., Iowa City, Iowa

Professor of Prosthetic Dentistry and Orthodontia, College of Dentistry, State University of Iowa

Every text-book on dental prosthetics devotes a chapter to the anatomy of the temporo-mandibular articulation, and many laudable efforts to devise a method of reproducing the condyle path upon dental articulators are recorded. Only the osseous structures of this articulation, however, have been given any practical consideration in the attempts to construct a mechanical apparatus which would imitate the complex mandibular movements. The soft tissues, of which the inter-articular fibro-cartilage is the most important, have been almost entirely disregarded. It is true that all textbooks mention and vaguely describe this meniscus, nevertheless one is reminded of the mention which occlusion of the teeth was given in treatises on orthodontia prior to the days of Dr. E. H. Angle's recognition and application of this anatomical factor as the basis of all orthodontic procedures.

Unfortunately, like other parts of the human anatomy which are of primary and almost exclusive interest to the dentist, the meniscus has been given honorable mention by anatomists in the description of the temporo-mandibular articulation, and there the matter rested. It is quite in keeping with the natural order of things that each specialty should seek and develop the knowledge pertinent to its own progress, and thereby strengthen itself. It is needless to state that the prosthetist's and the orthodontist's chances for studying this articular fibro-cartilage in situ are few and far between. It becomes necessary not only to obtain access to an anatomical laboratory, but also to elicit the assistance of an anatomist, and hence I believe the efforts of Dr. Henry J. Prentiss, professor of anatomy at the State University of Iowa, will readily meet the appreciation of the dental profession.*

In a recent discussion relative to mandibular movements the disputants agreed that the temporo-mandibular articulation (and this must include all the structures concerned in this articulation) is originally shaped in response to the occlusion of the teeth. It was likewise agreed that malocclusion and loss of teeth produce corresponding changes in the temporo-mandibular articulation.

*(See paper by Dr. Prentiss entitled "A Preliminary Report upon the Temporo-mandibular Articulation in the Human Type," in this number of the Dental Digest.)

The investigation of Dr. H. J. Prentiss confirms these assumptions; furthermore, it calls attention to the fact that the meniscus is not the least important component of the temporo-mandibular articulation. The meniscus is that component part of this articulation which first receives the stimulus and also sustains the first impact to this joint resulting from the function of mastication.

Dissections of this joint clearly reveal the fact that following the loss of a few teeth the meniscus becomes thinned; following the loss of a larger number of teeth the meniscus is perforated, while following the loss of all teeth the entire upper surface of the condyle becomes denuded of inter-articular fibro-cartilage. Immediately following the perforation of the meniscus, absorption of the correspondingly exposed surfaces of the condyle and the glenoid fossa begins, and thus the change and reshaping of the temporo-mandibular articulation take place. It may not be amiss in passing to reiterate and emphasize the observation in the material thus far examined that the perforation of the meniscus always begins in the same location, namely, the external lateral angle.

From all that can be gleaned from the writings and discussions of the subject, the prosthetist and the orthodontist happily assume that this joint will readapt itself to the occlusion which their handicraft sees fit to establish—the one with artificial dentures and bridge work, the other with a corrected or improved occlusion of the natural teeth. However, practitioners of these branches of dentistry have frequently had occasion to wonder why such blissful dreams rarely come true. After enjoying the privilege of studying the anatomical material from which Dr. Prentiss derived his conclusions, one should be pardoned for wondering why the prosthetist's devices ever give reasonable satisfaction in any instance. At the same time one cannot help but give renewed expression of thankfulness to tolerant Mother Nature for granting as many reasonably good results to orthodontic operations which involve a change in the temporo-mandibular articulation.

The prosthetist's efforts are expended on individuals of mature years when destructive processes of osseous structures are more the order of the day than constructive growth. If cognizance is also given to the fact that a non-vascular organ, such as this inter-articular fibro-cartilage, has no recuperative or reconstructive power, then we can be little short of amazed by the assertion that it is the prosthetist's privilege and duty to establish an articulation of artificial dentures irrespective of the temporo-mandibular articulation of any given case, because the occlusion of the teeth of artificial dentures decreed by the prosthetist will induce the matured structures of the temporo-mandibular articulation to grow as he wishes them to grow. The difficulty with this class of prosthetists

has been that they based their arguments upon what they could do, because that is plainly visible, giving no thought to conditions encountered in the living subject which are not necessarily amenable to their mechanical efforts.

The prosthetist is at a disadvantage because his restorations must be adapted to abnormal condyle paths of infinite variations. In the largest proportion of cases of artificial dentures and bridges we must expect to deal with thinned or perforated menisci. It is a universal experience that artificial dentures will permit of exerting only a small fraction of the force capable of being exerted by natural teeth. This has been attributed solely to the mobility of the bases upon which artificial dentures must necessarily be constructed. While this is unquestionably an important factor, may we not assume that the loss of power and masticating efficiency is also in part due to an instinctive hesitation on the part of the patient to exert more force, to avoid at least a feeling of discomfort, not to say pain? Occasionally, patients for whom apparently well-occluding bridges have been made will complain of a loss of masticating power or of an interference with the freedom of mandibular movements, or according to a recently published article, that the bridges "feel like stone walls." These complaints have been ascribed to a neurotic tendency in the patient, or to excessive peevishness, etc. However, such conditions are more correctly explained by the knowledge that in such cases the normally intervening fibro-cartilage has been irreparably destroyed, and as a result the denuded bone surfaces of this articulation have been forced into frictional contact by this so-called improved occlusion.

There are types of malocclusion which present a short horizontal ramus or body of the mandible, usually characterized by a receding chin. These cases suggest the necessity of carrying the mandible forward by means of a bite plane, and the operator has proceeded to "jump the bite"in the endeavor to produce a change in the temporo-mandibular articulation which would permanently compensate for the shortness of the horizontal ramus

Practical experience in such cases proves the impossibility of achieving the desired result, and a study of the anatomy of the articulation stamps such an orthodontic operation as questionable. Whatever improvement is possible in these cases is due to a correction of the occlusion of the teeth and the consequent molding of the body of the bone.

It is immaterial whether or not, at this time, the difficult task of constructing a device upon which the mandibular movements can be imitated has been accomplished. Nevertheless, a sincere appreciation is due the men who have intuitively or otherwise recognized the futility of placing the cart before the horse. Most deserving of mention in this connection is the work of Dr. Gysi.

The argument that some of the dentures constructed according to any of the methods which ignore existing natural conditions are successfully worn, or that fixed bridge work which has violated the important demand for mobility of the teeth has been paid for and worn by that same patient individual, reminds one of the argument that individuals whose wounds have been treated by applications of cowdung have survived in the struggle for existence. If scientific men were content to depend upon such reasoning it would indeed be deplorable.—*The Cosmos.*

A NEW JUVENILE TOOTH BOOK

"A Child's Book of the Teeth," by Harrison Wader Ferguson, D.D.S., is a most excellent primer on mouth hygiene and should go far to make the subject interesting to young readers. We believe the author has performed a valuable service, and the book should be in every primary school to assist teachers.

The author says: "The mere repetition of an act through compulsion does not fix a habit unless the act is interesting, and it is only by giving the child a knowledge of his teeth and by making their care attractive and interesting that we shall fix the habit of cleanliness in him." This book is designed with that object in view, and it is a very worthy contribution to the cause of mouth hygiene.

"A Child's Book of the Teeth," illustrated by the author, Harrison Wader Ferguson, D.D.S., boards, 63 pages; published by World Book Company, Yonkers, N. Y.

DISCIPLINE

The disciplined always get the best of things, for they love without lust, drink without drunkenness, eat without gluttony, play without excess, work without impatience, get money without greed and spend it without hurt. Discipline means the difference between success and failure.—DR. CRANE.

OATS, HAY, AND STRAW IN AUSTRIANS' BREAD

An official chemical examination of the black bread eaten by the Austrian soldiers who were in this campaign showed 32 per cent. of oat flour, the remainder being ground-up wood fibre, straw, hay, and other unidentified ingredients.

EXTRACTIONS

Any man can make his wife do anything she wants to.

Travel Note—A great many Americans are going to Europe this year.

The girl in the case knows a man's in love long before he tumbles to the fact.

A wise woman doesn't attempt to manage her husband—she feeds him and trusts to luck.

A scientist has discovered that hens lay eggs in the day time because at night they are roosters.

Longley's (in 1920)—We do all our cooking by electricity here.

Customer—Take this egg out and give it another shock.

Harrison—Well, what did you say to that new girl last night?

Mallinson—Er—I asked if I could see her home and she said she would send me a picture of it.

Tillie Clinger says that when she came home last night and found the landlady's husband scratching timidly at the front door he said, "Sh-h! If she thinks I'm the dog she'll let me in."

"Do you believe in heredity?"

"Yes," said the school teacher. "There's a little boy in my class who has to return home every day for his books, pencils, and pens. His father's a plumber."

"Pa, what's a pseudonym?"

"I don't know, son," replied the man whose car is in the repair shop a great deal of the time, "but if it's a thingumbob that belongs to an automobile, I'll have to buy it sooner or later."

"Home from school so early, Jimmy?"

"Yep. Teacher sick."

"But none of the other children have come home."

"Nope. I'm the only one to get out. Teacher said I made her sick, so she sent me home."

The anti-vivisectionists are no doubt well meaning people, but they make us think of the little girl who shed tears in looking at a picture of lions devouring Christian martyrs in the Roman Arena, because there was "one poor lion who didn't have any Christian to eat."

"I hear on good authority," said the Man Who Knows Everything, "that the latest device of the Germans is to paint the sides of their 'U' boats with English jokes, so that when they are in the vicinity of the Scottish coast the skippers of the trawlers are unable to see them!"

A schoolmistress asked her class to explain the word "bachelor," and was very much amused when a little girl answered, "a bachelor is a very happy man."

"Where did you learn that?" asked the mistress.

"Father told me," the little girl replied.

Dorothy Stuyvesant Latterbury blushing delicately, in filmy wedding gown, came daintily up the aisle, her gossamer veil floating like mist about her head. She was any man's best bet for an angel. At the altar she stubbed her toe on a potted lily resting on the floor. She said to the minister "That is a hell of a place for a lily. '

Young Fiddle was a very learned young man, and his friends were all very disappointed, not to say surprised, when he refused to accept the degree of doctor of divinity. One of his colleagues tackled him on the subject.

"Ah, well," replied the learned young man, "it's enough to be named Fiddle, without being Fiddle, D. D."

DIETETICS AND HEALTH

HOW TO POSTPONE OLD AGE

A good many people never know that they have hardening of the arteries until something snaps and they have to say "good bye."

Every man past 50 should find out his condition and regulate his life accordingly, unless he is willing to go to the scrap heap before his time.

It costs but little to go to a good doctor and let him take your blood pressure.

"A man is as old as his arteries." In other words a man's age is not a matter of years but of arterial activity. Whether a man is old or young at 50 depends on the condition of his arteries and the condition of his arteries depends on the kind of life he has lived and the food he eats.

Of course a man might inherit certain weaknesses in other organs and still have good arteries. Yet it is difficult to imagine the existence of disease of any organ without its having an effect upon the arteries, the arteries that carry the blood to the millions of little cells out of which the body is made. These arteries are made of very elastic fibrous tissue which permits of considerable dilatation. This elastic property of the arteries is essential to the proper performance of their functions. In old age the arteries lose much of their elasticity and begin to harden and contract. This hardening of the arteries is known as "arteriosclerosis." This interferes with the proper circulation of blood in the tissues, and consequently the tissue changes which belong to old age are produced.

Now, it has been found by experiments that this condition of the arteries may be brought about in middle life by the use of alcohol and by eating an excess of high proteid foods. Constant indulgence in alcoholic stimulants and the excessive eating of meat, eggs and other high proteid foods destroys the elasticity of the arterial walls.

It is this elasticity of the arteries that enables them to accommodate themselves to the supply of blood forced into them.

The question is, can a person prevent hardening of the arteries and thus postpone old age? Discarding all the conflicting theories of the

scientists, we can be certain of one thing, and that is that alcohol and a high proteid diet promote hardening of the arteries. It is one of the interesting things connected with man's nutrition that in old age he will maintain health and strength by returning to the diet of his childhood.

In extreme old age the nearer we adhere to the simple bread and milk diet the better and healthier we are and the longer and more satisfactorily we will live. It follows, therefore, in order to postpone old age and prevent the hardening of the arteries we should limit the proteid elements in our diet and if possible make fresh milk an important factor in our daily nutrition.

A proper diet list for persons who have a tendency toward arteriosclerosis should include soft boiled eggs, broiled fish, broiled chicken, turkey, partridge, oysters, an occasional lamb chop, lettuce, spinach, celery, string beans, squash, cauliflower, onions, green corn, shredded wheat biscuit, milk or buttermilk, oranges, grape fruit, stewed peaches, apricots, plums, prunes, grapes and baked apples. Avoid all alcoholic stimulants and drink plenty of distilled water between meals.

THE USE OF MILK

This paper never unreservedly praises milk as a food for adults partly because it is so hard to get milk that is pure and fresh.

It is true beyond question, however, that a diet of pure fresh milk, just from the healthy cow will do more to restore many rundown persons to a normal condition than any method of treatment known. That is why some of the milk cures, so-called, succeed. Pasteurizing milk may be necessary but it certainly does destroy some of the life-giving elements of fresh milk.

Lorand the great authority says:

We should always use raw milk, and only when there is doubt as to the origin of the milk should we heat it, and then not above 140° F, so as not to destroy all its valuable properties. There is a wonderful difference in the effects of boiled and raw milk. It has been shown that animals fed on milk heated to a high temperature never thrive well. In children also we can see the bad effects of boiled milk. Barlow's disease and rickets may have been due to drinking overheated milk. When calves are fed on boiled milk they acquire rickety deformities of the bones and scorbutic conditions. The majority of calves died from exhausting diarrhea, just as do infants in large cities.—*Healthy Home*

THE ABSOLUTE TRUTH ABOUT FINE FLOUR

"The introduction of the roller-mill system of 1878, by means of which it was made possible to separate the various parts of the kernel, namely: The germ of embryo, the bran and the endosperm, or starchy part, made it possible to grind the starchy part to a very fine flour, which, on account of its white appearance, appealed to the housewife as an assumably purer product, thus depriving the finished product of some valuable food constituents.

"The large number of analyses of such products made in the Bureau of Chemistry of the Department of Agriculture and at the Hygienic Laboratory clearly show that the highly milled wheat flour and degerminated corn meal contain less protein, fat and mineral matter than the old-fashioned products. Fowl, the classical experimental animal, will live in perfect health, for many months on an exclusive diet of unmilled wheat or unmilled corn. If these animals are fed, however, on highly milled products they will die within a month or two of polyneuritis, a disease very similar to beri-beri."

The above is on the authority of the United States Public Health service. Fine flour would kill the folks that use it as it does the fowl if a lot of other food were not used with it.

Where sufficient proper food is eaten, white bread may do no harm. White bread will not, with sufficient proper food, cause pellagra, beriberi or any of their kindred evils. Neither will polished rice or pearled barley or ordinary commercial corn meal or any of the scores of other demineralized commercial food preparations, that for appearance sake or to prevent decay on the shelves of the grocer are robbed of their life-sustaining elements, cause pellagra where "sufficient proper food is eaten."

The shame of it is that bread ought to be a perfect food in itself but must be supplemented by meat, green foods, milk, vegetables and fruits in abundance, else those who eat it will be sick or starve. It is unfortunate also that the only whole wheat food that is usually accessible and cheap is shredded wheat. If you want whole wheat flour you generally have to make an excursion to get it. This may be one of the things which the war will change here as it already has in England and Germany.—*The Healthy Home.*

PRACTICAL HINTS

This department is in charge of Dr. V. C. Smedley, 604 California Bldg., Denver, Colo. To avoid unnecessary delay, Hints, Questions, and Answers should be sent direct to him.

TAKING A BITE FOR CROWN OR BRIDGE WORK.—One of the most difficult items in operative dentistry to contend with is the taking of a satisfactory bite, particularly where the occlusions are close. When the wax or compound bite is removed it often breaks in two pieces making it difficult to obtain a perfect cast for the occluding surfaces to be articulated to the crown or bridge about to be constructed, or breaks when placed on the plaster model. Many ideas have been advanced for overcoming this, such as placing a piece of linen, cut about the length and width of the bite to be taken, then placing the wax above and below the piece of linen, taking the bite in the usual manner. The linen holds the bite together and prevents biting clear through. A better and more rapid way of obtaining this result is the use of the Articu-Bite, a nifty little instrument in which all manner of hard, close, difficult articulations and bites can be obtained in two minutes' time without the possibility of a mistake.—W. E. BEACHLEY, D.D.S., Hagerstown, Md.

QUESTIONS AND ANSWERS

REMOVING STAINS FROM PORCELAIN

Editor DENTAL DIGEST:

In reference to inquiry of Dr. Van Valin in June DIGEST regarding method of removing silver nitrate stains from porcelain, I would answer: Apply strong solution of $HgCl_2$, bichlorid of mercury. A chemical action causes the combination of the silver with the chlorine, giving silver chloride. A soluble mercuric salt of nitrogen is formed, which is easily removed under a stream of water.

W. W. ELDRIDGE, M.D.

Editor DENTAL DIGEST:

Answer to R. W. Van Valin: Remove Silver Nitrate with Iodine, then remove Iodine with Hyposulphate of Soda.—J. ALBERT BRISTOW.

Editor DENTAL DIGEST:

In June, 1918, Practical Hints, C. E. H. tells how to remove a broken post from a detached post crown. His method requires immersion over night. If a porcelain evaporating dish is used with nitric acid diluted, and heat applied, the broken pins can sometimes be removed in 15 minutes to an hour.

Dr. R. W. Van Valin asks how to remove silver nitrate stains from porcelain bowls. Cyanide of Potash, moistened, has done it for me. This, of course, is a deadly poison and must be used with extreme care.

Yours truly,

H. W. HEIDORN, D.D.S.

Editor DENTAL DIGEST:

In answer to Dr. Van Valin's question about removing stains from porcelain washbowl will advise as follows: Use solution mercury bichlorid (corrosive sublimate).

MEIER.

Editor DENTAL DIGEST:

Dr. Van Valin's trouble with stains on porcelain basin can be treated successfully this way: Sprinkle a little NaCl. over the moistened surface, allowing it to stand for a minute or two, then washing with soap as usual.

H. E. EDDY, D.D.S.

Editor DENTAL DIGEST:

I have struck a case on which I would like some help. A woman came to me with the point of a needle broken off in the root of a central incisor. She says that the only way she could keep the tooth easy was to keep the root cleaned out. So she used a needle to pick it with. There is a cavity on the mesial surface and when she ran the needle (a common sewing needle, about a No. 7, she thinks) into the root the last time a good piece of the point broke off. Now, I can feel the point with a broach and can occasionally run the broach up by it, but can not move the point.

I have sealed in iodine three times but seemingly without result.

She doesn't want the tooth cut off and a porcelain crown put on, so I

do not know what to do. The tooth is a little sore all the time but there is no swelling or acute pain.

Any advice will be greatly appreciated.

Very truly,
R. HARTWELL WILDS, D.D.S.

ANSWER.—Often the point of a broach can be removed from a canal by running a sharp, fine, twist, Kerr reamer backward in the handpiece. Most likely, however, this tooth should be extracted. I think it is very doubtful if we are ever justified in retaining such infected teeth.—V. C. S.

Editor DENTAL DIGEST:

Please advise me on two points, as follows:

1. Prevent leakage from devitalization on approximal cavities, although sealed with cement.

2. Arsenic injured gum tissue so that sloughing set in, gum around teeth burnt away and a large space formed. Was obliged to extract two teeth adjoining each other.

Is there any preventive treatment drug; if so what, and how used?

And oblige,
DR. L. K.

ANSWER.—No. 1. Think the answer to your first question is that you are mistaken as to the cavity having been thoroughly sealed with cement. Must have been slight moisture in the bottom of cavity or cement not packed thoroughly to seat.

No. 2. I never use arsenic in any case. Perhaps, though, some other reader can answer this question for you.—V. C. S.

WINTER EXODONTIA CLUB NUMBER ONE

The Exodontists of Minneapolis and St. Paul had their first formal meeting at the Minneapolis Athletic Club, May 19, 1918. The guest of honor was Dr. George B. Winter of St. Louis, the author of "Exodontia," and the originator of a new technique for the removal of impacted lower third molars. Dr. Winter demonstrated the efficiency of his system by removing a large number of impactions, at a clinic, the average time employed being less than one minute.

For recognition of his contributions to science, the Club honored him by naming this, the first organization of its kind, for him.

HENRY B. CLARK, Pres.
CARL J. RICE, Sec'y.

CORRESPONDENCE

Editor DENTAL DIGEST:

This may be of interest to some of your readers: A few days ago a colored woman came into my office complaining of what she called a "growth" in her mouth. Upon examination I found salivary deposits on the lingual surface of the lower anteriors covering the floor of the mouth forming an almost straight line to the second bicuspids on either side, and to the incisal edge of the teeth. I removed it in one piece, which weighed 109 grains and measured 20mm from bicuspid to bicuspid, 20mm distally from the incisors and 15mm greatest thickness. This is the largest I ever heard of.

Yours respectfully,
H. V. MELIN, D.D.S.

Editor DENTAL DIGEST:

A few days ago a very interesting case came to my notice.

A drafted man presented himself to have his mouth put in shape before reporting for army training. He told me that he had never had any dental work done, but upon examination I found what appeared to be an amalgam filling in a rather large mesio-occlusal cavity in one of the upper molars. He said that about five years ago he had packed some tinfoil from a cigarette package into the cavity to prevent food from lodging in it. It looked very much like a shrunken amalgam filling. The force of mastication had forced the foil slightly below the occlusal margins and out onto the gum between the teeth. Upon removal of the mass, which was very dense, the cavity walls were found to be sound and hard though rather dark. Evidently the tin had arrested the process of decay. The young man had done a good job for an amateur and the filling had served its purpose better than some inserted by more experienced men.

R. HARTWELL WILDS, D.D.S.

Editor DENTAL DIGEST:

In the June number of the DIGEST you print a paper by Dr. Paul A. Barker, page 348. At the bottom of page 349 there is printed the paragraph which reads, "Some will possibly maintain that a child's natural

resistance is greater than that of an adult . . . and consequently is less susceptible to the dangers of focal infection than an adult." He then writes of the diseases the child is susceptible to and to which the adult is practically immune, and then closes with, "and it is during these periods of sickness when the resistance is lowered and the vitality undermined that the pus bacteria from abscessed teeth get in their work, and are liable to make recovery a slow and difficult task at best, and at the worst may hasten the death of the little patient."

Now to the point. Question: If a child's natural resistance is really greater than that of an adult, why then should the child be subject to a long list of diseases to which the adult is practically immune? Now it may be that the medical world also thinks that the child's resistance is greater than the adults. If they do think so, then in my opinion they are wrong, because it is easy enough to see from the foregoing that logically a body that has a greater natural resistance should at least proportionately keep off disease. If it is maintained that the child's natural resistance is greater, why does the child suffer from more diseases than the adult?

My opinion is the reverse of that expressed by Dr. Barker. I maintain that the reason the child is prone to so many diseases is that the child's natural resistance is lower than that of the adult. There is to my mind a very good reason for this assumption. Let us see. What is the normal physiological activity in the child, and relatively what is its degree of intensity? Simply this. Vascularity is undoubtedly proportionately greater and intense than in the fully developed adult. This intensely high vascularity implies great cellular activity, viz., growth. Intense vascularity implies intense facilities for absorption. Greater facilities for absorption point the way for the ease of toxin absorption in the child, hence—and please note this—it is the intense facilities for the absorption of toxins which, in the child, makes it less immune to disease than the adult, and paralleling this last is the fact (?) that in the child nature has not yet perfected that natural resistance to disease which so wonderfully is developed in the adult and protects him. You must bear in mind that abscessed teeth are not normal to the child, and their early presence calls upon nature to give and offer resistance for which she is not yet fully prepared. Don't overlook that normal factor of high vascularity.

So to my mind, minimizing the ability for focal areas to develop throughout the body, especially within the oral cavity and the throat, will leave the child least susceptible to disease, and will spare to nature the invasion upon its efforts to upbuild a body properly.

PHILIP SCHEIMAN, D.D.S.

Editor DENTAL DIGEST:

Will welcome any suggestion which can be made to prevent a repetition of conditions here presented. Replies can be sent to DENTAL DIGEST.

My boy, six years old, healthy, has developed the following signs on his second teeth:

Lower left six year molar, and lower right six year molar, and upper left central—the three permanent teeth that are already erupted are white on the neck, and one-third on the crown surfaces is yellow on the left central, while molar and cusps are all yellow.

All his deciduous teeth, were in first class condition, never had trouble or any decay, white as milk and occlusion, etc., normal.

In September, 1915, he was operated on for adenoid trouble and tonsils were removed. When he was eight months old he had a slight attack of broncho-pneumonia which lasted only a few weeks. At his first year he started to walk, but had to be treated in his second year for bowlegs, which were brought to normal condition in six months' time by wearing an apparatus. Both legs are now perfectly straight.

Boy is in perfect health now and growing fast for his age. So far as can be traced to the fourth generation no abnormal disease of any kind in the family of mother or father. Both healthy, good teeth, other children (4) in perfect condition.

Any way of preventing the other teeth developing in the same way will be appreciated.

DR. J. R. P.

Editor DENTAL DIGEST:

After receiving the enclosed letter I thought it would be interesting to pass it along.

C. V. M.

SIR: My mouth gave me considerable trouble, and yesterday I consulted our home medical Dr. as my gums shrunk up it or they exposed a large root of a large back tooth on the right side. if you will reccolect you only pulled the top off of it & I would say it be unjust for you to offer an apology. if I lived handy you I could drop in but for me to lose a day to come down means at least $3.00 expense besides my days work lost, I paid you your bill I don't consider I should of been taken the advantage of. you reccolect I paid you 14.50 for extracting and making me a partial set that was never satisfactory never could eat with them before this root gave me trouble. My cousin of near here was on the

verge of going to Rockford and I reccomended you as could not be beat and you know the consequince, she came to you. I had all confidence in you with it all. I fully intended to have you make my teeth but I am going to Rockford this week to have my root taken and impression takem. Sorry I cannot reccomend you any farther Dr. nor have you do my work. I have the price and will pay the price and I want the goods on the square. Dr. trusting you may not feel hurt, as I had this to say and when I have said it there is no ill feeling toward you by me.

Your Friend etc.

A——.

Editor DENTAL DIGEST:

I am sending you a letter I received from a farmer patient, to whom I had sent a bill for $7.00. Five dollars of this amount was for replacing a gold restoration, and two dollars for other work. The letter follows:

W. A. ROTHSCHILD.

Dear Sir:— Enclosed find to ballance my account the following:—

By gold $5.00

By check 2.00

By god . . . . . You're paid

Editor DENTAL DIGEST:

To those who think Dentistry cannot be run on a business basis the following may be of some use:

For the past four years it has been my policy in the conduct of my business to have a deposit on all work and the patient is given to understand that he is to pay the balance of the account at his last appointment.

Seven months ago a young lady, whom I had never seen before, came to me for a piece of bridge work which would amount to eighty dollars. I told her, as I do all my other patients, of the way I conducted my practice, and she paid me a deposit of five dollars. I gave her a card to the exodontist and an appointment for two weeks from that date. She did not keep the appointment, and I did not hear from her till about two months after, when she called me on the phone making an appointment for the third day following; she did not keep this appointment and as she lived some eighty miles from my office I took it that she had missed her train. I did not hear from her for three months after that, and then

I wrote her asking her why she had not been in and when she would come. I received a registered letter from her the next week which read as follows:

"DEAR DOCTOR: I lost my position, but I want the bridge work done, so I am sending you twenty-one dollars to apply on the balance due you, and when I get the rest I will send it to you and then come in and have the bridge made. I will send the rest in a couple of weeks.

Yours truly,

S— H—."

WE GIVE IT UP!

Editor DIGEST:

Kindly tell me through the columns of DIGEST the best method to stop patients bringing two, three, and four friends along when having dental work done.

This is truly a problem with me. Have a waiting room 15 x 15, and when two or three crowds like this come in about the same time, my office looks like a movie theatre.

Very truly yours,

DR. M. S. M.

Editor DENTAL DIGEST:

In answer to Mrs. B. R. D.'s communication on "Time for Action," would like to state the following facts:

If fees are inadequate why not make them adequate, and then the difficulties encountered will gradually adjust themselves.

True, you will find men all over the continent charging far less than they really ought to receive, providing their work is done conscientiously and efficiently. In this rank you will find the advertisers and fortunately but a few ethical men who do their work in a "Oh! that's good enough—the patient doesn't know the difference" manner. Don't put yourself in this class—keep out of it. What else can be expected but a low fee if charges are made in proportion to services rendered?

There is nothing the matter with the profession! The dental profession to-day offers ample and more opportunities than any other, to the man who makes an effort to "make good."

If fees are inadequate blame the man, not the profession, or the

patient. The profession can not be held responsible for a few indifferent men who care not what they charge or give away. The chances are that the *man* who spends ten minutes to half an hour relieving an aching tooth, charging nothing for his time, would not make a success in the profession of law, or as a plumber or carpenter. That man places himself in the same class as the one who advises others to "run a peanut stand" instead of practising dentistry. He lacks two great things above all, namely, initiative and self confidence.

If some one would walk into his office and say "Give me your office equipment," would he do it? Absolutely No, if he had his right senses.

These are days when no one gives you "something for nothing," unless it is stolen.

If you have anything to give away give it to the Red Cross, or if in the line of free dental services, join the Preparedness League of American Dentists.

A man who charges nothing for his time in his daily routine cannot expect to achieve success in any business calling. There is no place for him. In conclusion I would say to Mrs. B. R. D. to place the blame where it belongs, and that is the "man behind the chair," for whom the entire profession is not to be blamed. Any profession or business enterprise is what the *man* makes it himself.

R. X. McD.

Editor DENTAL DIGEST:

Have neglected writing an article for the DIGEST for some time about "Honesty of a Dentist." Find just such an article in April number by Dr. Miller of Altoona, Pa., but will take exception to his statement that "a man who advertises is unethical, and severs himself from every source of knowledge."

Have practised about five years, do some advertising (about 3 inches square in the newspaper), never mention price or how much better service can be rendered here than elsewhere, but try to remove fear from people's minds, which is a godsend to many a nervous person. But coming back to what I want to write about is "Honesty."

Have never joined the Society, for which I think I have good reasons, yet I know one is criticized no matter how honest he may be. And speaking of ethics, here is a true incident which I happen to know about personally. A patient consulted a Dental Professor in a good college, one claiming to be a *radical ethical man*, about a loose bridge the above mentioned Professor placed in her mouth about five years previously. He insisted it was not loose, gave her a half-hour talk on pyorrhea, charged

her one dollar, and sent her home. The following week she appeared in my office, saying she wanted to know if I could detect the looseness of her bridge. I lifted the back crown about one-half inch from the lower molar tooth, and the odor was strong enough to necessitate the opening of a window close by. Now, this woman insisted that when her dentist placed the bridge there she expected it to be tightened by him. This man is teaching boys to go through college, and yet not honest enough to remove from that woman's mouth garbage enough in the back crown to cause her death.

God save me from ethics, if such ethics can allow his conscience to sleep at night, when he is daily preaching same and criticizing those who do not come under that "Royal" name. Honesty and proclaimed ethics are entirely different things. Honesty is from your heart, deep down, and not placed there in a day. Honesty, not only in Dentistry but in all walks of life, is what every man needs. When patients walk into your office give them as good work as you would your "sweet son" if he were to come in for the same purpose. This will lead your fellow dentists to ask: "Why is Dr. So and So rushed with work?" The square deal is the thing. Otherwise, be sure your sins will find you out! Here are my ethics.

J. F. P.

A CASE OF REFERRED PAIN

Editor, DENTAL DIGEST:

Patient complained of terrific pain in lower left first molar. On examination of tooth, could find no condition that would cause even the slightest disturbance in the lower arch. Examination of the upper left arch revealed a carious second bicuspid, with cavity filled with hypertrophied gum tissue. Patient insisted that the upper tooth was not giving the slightest trouble, and begged me not to operate on it for fear that it would start it aching. The hypertrophied tissue was removed and tooth treated. This was a fine example of referred pain, and quite amusing to me to find the patient so surprised to know that one could actually have pain in an altogether different location than the actual seat of disturbance.

J. G. ARBENZ
First Lieut., D. R. C.